

Reflects the density of all emergency and non-emergency responses in 2021



## 2021 BREAK-EVEN DATE

**April 30th**

When the total value of property and contents saved by the GRFD surpassed the department's annual budget.

## 2021 GRFD Annual Report

Total Responses.....	23,986
Grand Rapids Responses.....	23,885
Responses Outside of Grand Rapids.....	101
Apparatus Responses.....	33,536

# MESSAGE FROM THE FIRE CHIEF

## JOHN S. LEHMAN



I am thankful for all of the hard work of the men and women of the Grand Rapids Fire Department. In 2021 we experienced a slow climb out of the clutches of the pandemic and that has shown us that unless you work in a coordinated way with local government and our unions, there is not much chance for success. We continue to be thankful for the professionalism of our Emergency Manager Allison Farole. It's hard to imagine where we would be without her. At a time when many organizations were satisfied with status quo, I am proud that we continued to improve in several areas.



Our continuous Improvement efforts resulted in Accreditation by the Center for Public Safety Excellence for the 2<sup>nd</sup> time and it was made relatively easy because of the efforts of our planning division.

Significant strides have been made towards our goal of increasing our Emergency Medical Licensure to the level of Emergency Medical Technician (EMT) by 2023. The Homeless Outreach Team (H.O.T.) has grown to thirteen personnel with our great partners from Network 180 proving to be invaluable assets as we do work with the H.O.T. team in our community.

Lastly, with the retirement of Deputy Chief Todd VanderWall I lost a valued member of my Executive Team. His experience and dedication will be greatly missed. Replacing him in our Operations Division is Deputy Chief Jack Johnson who is getting up to speed very quickly. I would like to recognize the dedicated service of all of those who retired in 2021 and the new hires we continue to add to our ranks. I am encouraged as we move into 2022 that we are heading in a positive direction with a strong crew to assist in accomplishing our Mission.



Fraternally,

Chief John S. Lehman

A handwritten signature in black ink, appearing to read "John S. Lehman".





## 2021 AWARDS CEREMONY

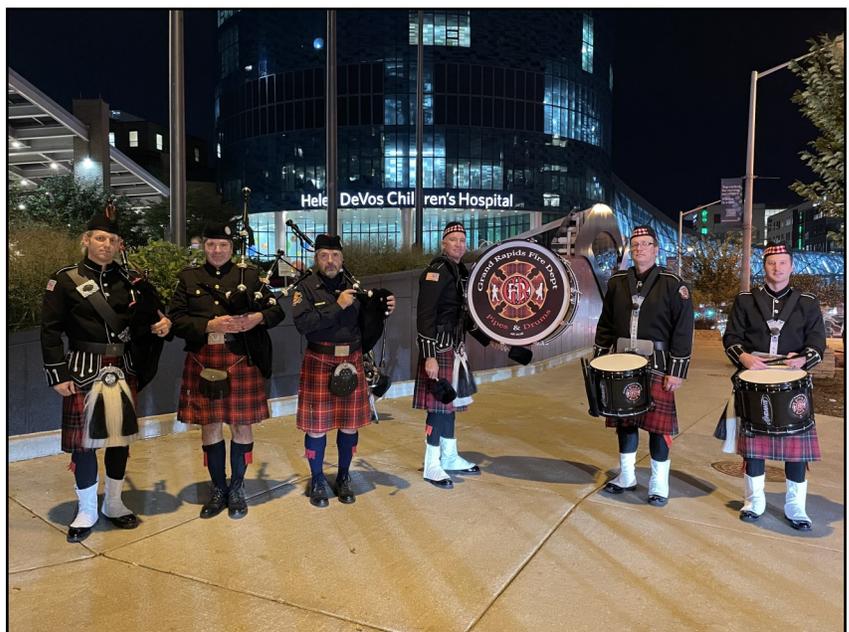
In 2021, the Annual Awards Ceremony took place, combining the 2020 and 2021 awards ceremonies, and included a tribute to Chaplain Father Dennis Morrow, the 2020 Firefighter of the Year.

Recognitions included a Unit Citation for an extensive Elevator Rescue, 11 Medical Service Awards, a Live Birth Award and seven individuals receiving Citizen's Valor Awards. Many members were recognized for their years of service including three individuals who celebrated 35 years of service.

The American Legion opted to honor all Grand Rapids Fire Department personnel as the 2021 Firefighter of the Year for the department's response to the COVID-19 pandemic.

## PIPES AND DRUMS

The tradition of playing bagpipes at fire department funerals in the United States dates back over 150 years. In addition to participating at funerals, our GRFD Pipes and Drums have shared their talents commemorating events such as the 9/11 20th Anniversary Memorial Stair Climb, Helen DeVos Children's Hospital Project Night Lights, Recruit Graduation, GRFD Awards Ceremony, St. Patrick's Day Parade, Silent Night Parade and a Line of Duty Death in Chicago.



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# 2021 AT A GLANCE

Total Incidents

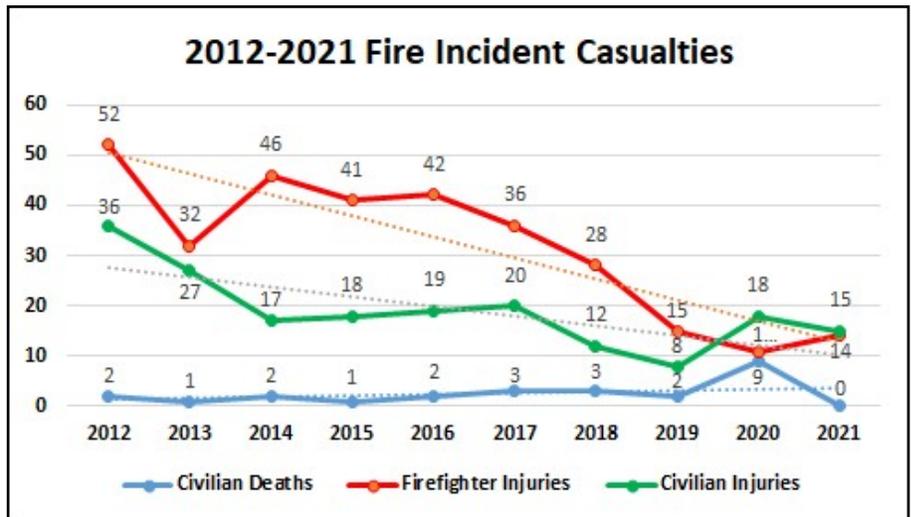
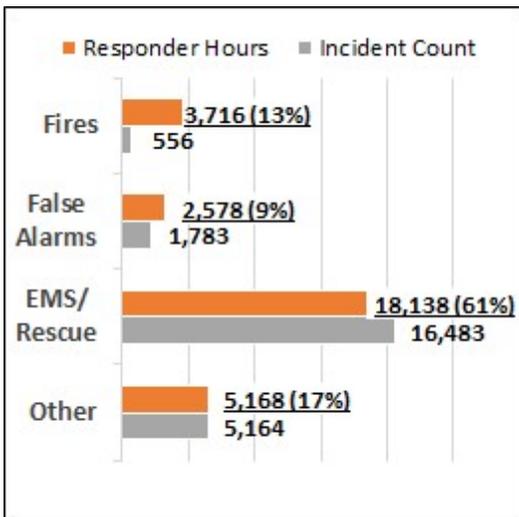
**23,986**

Apparatus Responses

**33,536**

Property Saved Rate..... 95.52%  
 Property Saved Value.....\$189,751,009  
 Property Loss Rate ..... 4.48%  
 Property Loss Value .....\$8,503,697  
 Civilian Injuries\* ..... 14  
 Civilian Deaths\*.....0  
 Firefighter Injuries\* ..... 14  
 Firefighter Deaths\*.....0

**23,885** Incidents within Grand Rapids  
**101** Incidents outside of Grand Rapids



## DATA TYPE DEFINITIONS

**Fire** (NFIRS 100s) - All Fires including Building Fires, Car Fires and Trash Fires

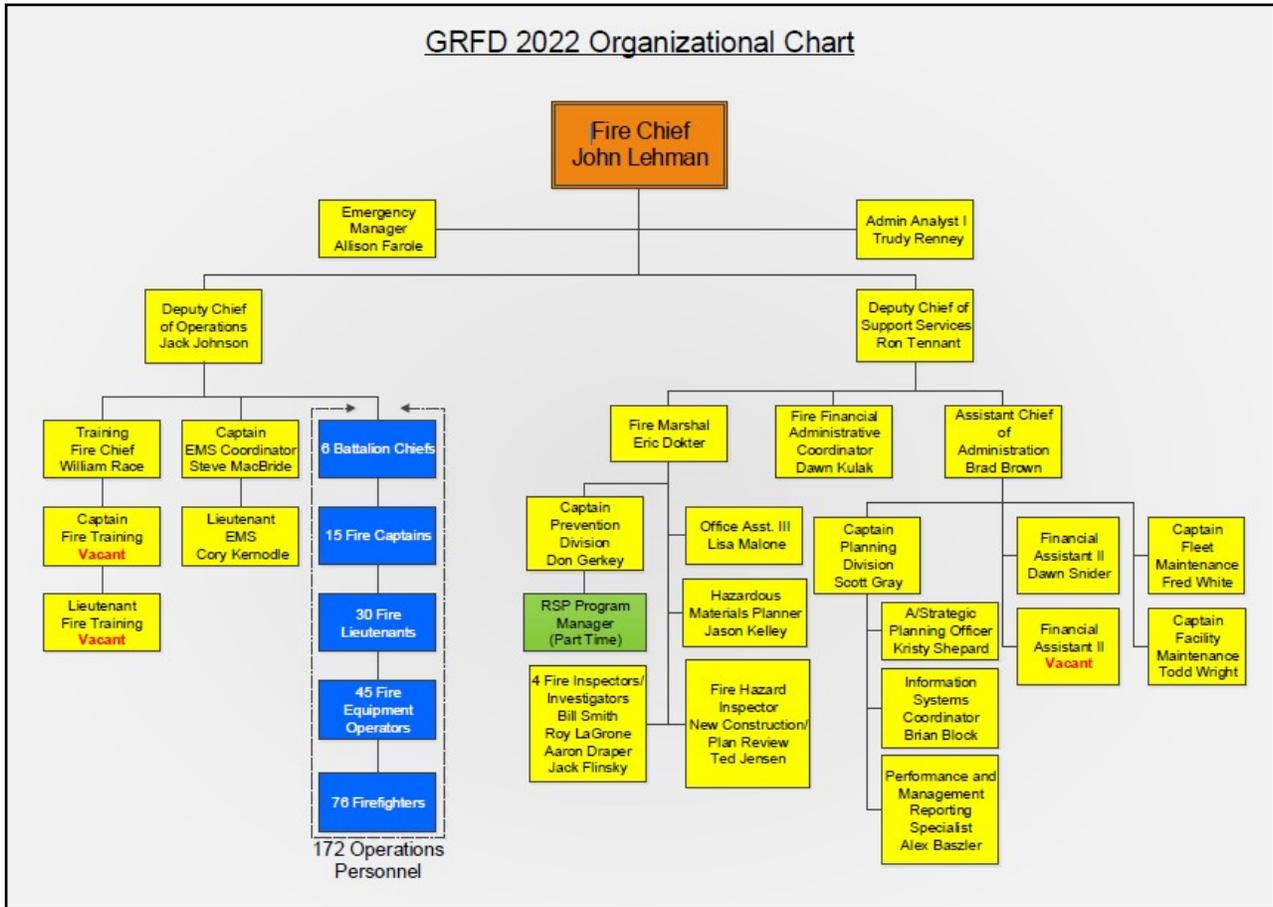
**False Alarms** (NFIRS 700s) - All False Alarms/Calls including Fire or CO Alarm System malfunction

**EMS/Rescue** (NFIRS 300s) - Includes Cardiac Arrests, Overdoses, Traumatic Injuries and Water/Tech Rescues

**Other** (All Remaining NFIRS codes) - Includes HazMat Responses, Lock Ins, Wire Downs, and Other Calls

*\*Civilian Injuries and Deaths are for fire incidents within Grand Rapids. Firefighter Injuries are only those that occurred during an active fire incident, including incidents outside of Grand Rapids. Training/Other on-duty injuries are documented in the "Wellness" section of this report.*

# GRFD ORGANIZATION AND FISCAL

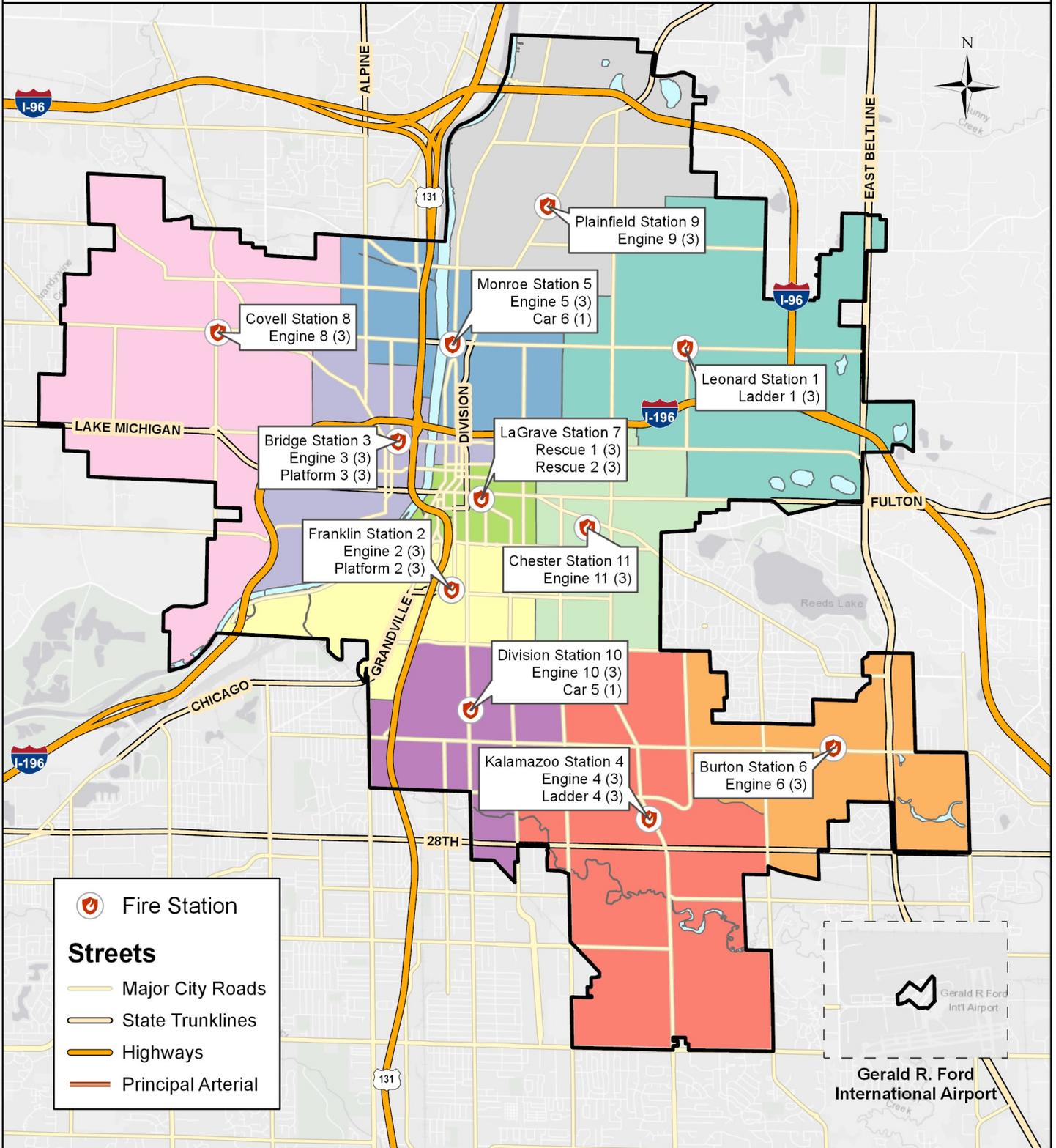


<b>2021 End of Year Total Personnel</b>  <b>196</b>	ADMINISTRATION..... 18 OPERATIONS ..... 167 PREVENTION..... 9 TRAINING ..... 2
FY 2022 CITY BUDGET ..... \$414,259,762 CITY GENERAL OPERATING FUND ..... \$155,955,117 GRFD ADOPTED BUDGET ..... \$33,690,496	

The FY21 estimated revenue of \$899,883 is a combination of fees and State funding. Total budget funds utilized in FY2021 budget year resulted in the department being 0.009% under budget for FY2021.

In September 2021, the GRFD received a FEMA grant award in the amount of \$284,323 for continuation and expansion of the Residential Safety Program. The FY22 estimated revenue of \$895,567 is a combination of fees and State funding. The first half of FY2022 closed with approximately 49.12% of the amended budget remaining and 83.07% of projected revenues having been received.

# Grand Rapids Fire Stations with Frontline Apparatus (and Personnel Counts)



# 2021 ADMINISTRATIVE CHIEFS SUMMARY

## DEPUTY CHIEF OF SUPPORT SERVICES



**Ron Tennant**

Primary responsibilities include oversight of personnel and human resources

- Hiring & Recruitment
- Evaluations & Injury Documentation
- Prevention Division
- General Management Support
- Scheduling & Leave Usage Management
- Promotions, Retirements, & New Hires



## DEPUTY CHIEF OF OPERATIONS



**Todd VanderWall**

Primary responsibilities involve overseeing response programs, communications and performance

**Strategic Plan Pillar Owner - Response**

- Station Alerting & Communications
- Self Contained Breathing Apparatus (SCBA)
- Radio Program
- Gas Monitor & Drone Programs
- Safety Committee
- EMS Division
- Homeless Outreach Team (H.O.T.)
- Response Metrics Analysis



## ASSISTANT CHIEF



**Brad Brown**

Primary responsibilities involve overseeing fiscal and strategic plans, maintenance, and procurement

**Strategic Plan Pillar Owner - Wellness**

- Fiscal Service Management (Budget)
- Building & Fleet Maintenance
- Strategic Planning
- PPE Program
- Wellness



## TRAINING CHIEF



### William Race

Primary responsibilities involve providing a wide variety of training and development opportunities for GRFD and non-GRFD personnel.

#### Strategic Plan Pillar Owner - Training

- GRFD Multi-Company & Instructor Training
- Hosting outside instructors for state classes
- Increasing City employee and citizen safety through CPR & Confined Space Training



## FIRE MARSHAL



### Eric Dokter

Primary responsibilities involve overseeing the Prevention Division for overall Community Risk Reduction

#### Strategic Plan Pillar Owner - Prevention

- Commercial Inspections & Plan Reviews
- Fire Investigations
- Public Education
- Residential Safety Program
- Fire Match



<b>FY19-22 STRATEGIC PLAN</b>		<b>MISSION</b>	The Grand Rapids Fire Department values people by saving lives, protecting property, and responding to the needs of our community			
		<b>VISION</b>	Providing world class fire services for our community by employing a diverse workforce which respects, values, and develops our members			
		<b>VALUES</b>	Honesty • Integrity • Loyalty • Teamwork • Excellence			
						
		<b>OWNER</b> Todd VanderWall <b>BACKUP</b> Chief Lehman	<b>OWNER</b> Bill Race <b>BACKUP</b> Steve Lehman	<b>OWNER</b> Eric Dokter <b>BACKUP</b> Don Gerkey	<b>OWNER</b> Brad Brown <b>BACKUP</b> Kathy Thompson	<b>OWNER</b> Ron Tennant <b>BACKUP</b> Eric Freeman
<b>DESIRED OUTCOME</b>		Effective all hazards deployment model with appropriate staff and apparatus	Provide the appropriate skills and education to ensure sustainability and growth at all ranks	Create a safer community by implementing an effective community risk reduction program	A healthier workforce through researching, designing, and implementing a structured wellness program	Provide continuous improvement of resources in a deliberate and planned manner
<b>FY19 STRATEGIES</b>		Increase community awareness of firefighting, EMS, and Special Operations	Comprehensive training curriculum development	Perform a community risk assessment to identify areas of concern	Research baseline insurance costs to ensure best value	Ensure continuity of operations through development of a promotion pathway and succession plan
<b>FY20 STRATEGIES</b>		Ensure appropriate response to high-risk building and events	Implementation of training curriculum	Develop formal community risk reduction modules	Design and develop a structured wellness program	Develop of a diverse hiring plan to ensure our workforce represents the community we serve
<b>FY21 STRATEGIES</b>		Ensure appropriate response to high-risk buildings and events	Make adjustments to the training curriculum based on current conditions (COVID-19)	Produce community risk reduction plans that align with Vision 2020	Address identified gaps in the wellness program	Provide comprehensive asset management in a fiscally responsible manner
<b>FY22 STRATEGIES</b>		Increase staffing levels to meet community risks	Evaluate whether the training program ensures sustainability and growth at all ranks	Implement community risk reduction plans	Evaluate program and focus on succession planning	Incorporate Emergency Management, COVID-19, and Fleet & Facilities as GRFD focal areas

v 2020.1

\*Due to COVID-19, the 3-year Strategic Plan was extended to a fourth year, resulting in new Goals and Tasks being identified for FY22.

# 2021 STRATEGIC PLAN REPORT OUT

## RESPONSE



Major accomplishments included working with the Homeless Outreach Team (H.O.T.) on defining their mission statement and creating goals and objectives for their team. They secured a workspace and determined their team make-up while establishing partnerships with organizations around the city. Plans are in place to conduct a full-scale high rise training exercise with surrounding jurisdictions to identify gaps in operational readiness. On-going talks continue with surrounding jurisdictions in an effort to enhance our auto-aid agreements.

## TRAINING



Adjustments were made to our training curriculum based on COVID-19 by expanding our available training options to account for social distancing. In that, much of our training was virtual or station-based. To assist with training, a handbook with pre-built lesson plans and training outlines was developed.

## PREVENTION



Work was done to produce Community Risk Reduction (CRR) plans that aligned with Vision 2020. Adjustments to the delivery of services was necessary to ensure social distancing due to COVID-19. Public education was provided for residential high-risk areas and research was done on new smoke detector technology to better serve the needs of our community.

## WELLNESS



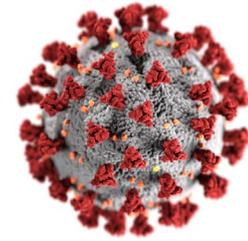
Wellness saw good progress during 2021 with additional bloodwork being added to our annual physicals, participation in citywide wellness training with the potential to earn up to \$250 in incentives, and setup of the CPAT course at the South Annex (1823 S. Division) where many crews go to test their physical abilities and workout. Grant funds are in the process of being spent on 12 new treadmills and 12 new stairmills to outfit each fire station with state of the art cardiovascular equipment. Wellness has provided over 3000 training hours to members of the GRFD throughout the year.

## SUPPORT SERVICES



Due to the one-year extension of the Strategic Plan, 3 new goals with 11 associated tasks were identified to work towards in FY22. The first goal was to identify plans to finish work affected by the pandemic. Second, we built a home for the goals and tasks of the new Emergency Management program. Third, we built a home for the Fleet and Facility goals and tasks. 11% of our strategic goals and tasks are waiting to be started due to budget and COVID-19 constraints while 67% of the work is in progress and 22% is already complete.

# 2021 SPECIAL MENTIONS



## COVID-19

Covid-19 continued to impact the GRFD with the Deputy Chief of Support Services being responsible for tracking, reporting, documenting, contact tracing and overall management of personnel affected by the disease. The Center for Disease Control, Kent County Health Department, KCEMS, MIOSHA, MDHHS and Governor of Michigan Executive orders all governed many of the actions we had to take to continue to provide our services to the community in a safe manner. The Deputy Chief was responsible for periodic assessment of the updates issued by these organizations. These updates were continually assessed and incorporated into our Policies, Guidelines and Standards of Work.

The number of employees whose work time was affected in some way by the pandemic is shown below. Of note is the decrease in close contact cases losing work time in 2021, due to the vaccination of over two-thirds of our personnel.

	2020	2021	Pandemic Total
Total Members Affected	275	163	438
Exposure Protocol	4	0	4
Family Contact	23	28	51
Crew/Close Contact	162	76	238
Symptoms	38	18	56
Positive/Diagnosed	48	41	89

## Candidate Physical Ability Test (CPAT)

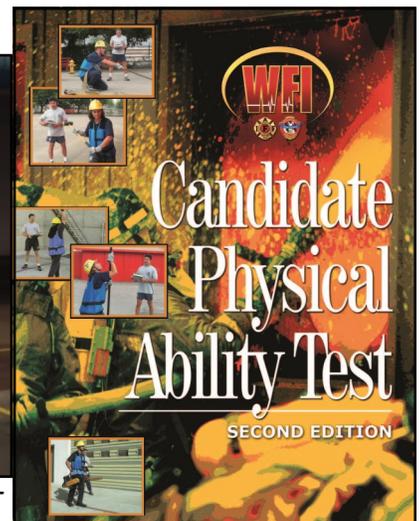
Through much work and dedication by our Training Division as well as many other members of our organization, the GRFD has become an internationally licensed site for administering the Candidate Physical Ability Test (CPAT) and offers monthly opportunities for candidates to earn their certification of completion.

This test is a joint venture of the International Association of Fire Fighters (IAFF), International Association of Fire Chiefs (IAFC) and the U.S. Equal Employment Opportunity Commission (EEOC). Testing is administered in accordance with standards set forth by these organizations and consists of 8 events that must be completed in 10 minutes and 20 seconds. This test was developed to allow fire departments to obtain pools of trainable candidates who are physically able to perform essential job tasks at fire scenes.

EO Lorelli, TSAC certified trainer, assisted Training Chief Race with initiating the application process and researching the course layout. Department personnel assisted in the development and set-up of the course and also became certified as test proctors.



City Manager Mark Washington completing the CPAT



# HIRING & RECRUITMENT

**Mission** *To continuously work toward finding and hiring a diverse workforce of qualified individuals.*

The GRFD Recruitment Team, led by Battalion Chief Eric Freeman, is comprised primarily of suppression personnel (non-administrative) who perform work beyond their normal duty shifts to reach out to bring high caliber applicants into this organization.

With the challenges COVID-19 continued to present in 2021 for in-person contacts, the Recruitment Team partnered with four interns from the University of Michigan's Engineering program to develop a website ([www.joingrfire.com](http://www.joingrfire.com)) that provides information on the GRFD, programs demonstrating what we do in the fire service and links to allow people to immediately apply for employment with us.



The programs that we advertise on our website include:

- **Fire Youth Academy** A week-long “miniature” Fire Academy where high school aged participants engage in various firefighter skills, drills and physical fitness activities.
- **JROTC** Year-round involvement with the Grand Rapids Public School’s JROTC programs where we expose those students to the fire service.
- **Explorer Program** Boy Scouts of America based volunteer program for youths aged 14-24 where they can work with fire service personnel while performing volunteer services in the community.
- **Fire Cadet Program** A program that we are developing to employ paid interns in the GRFD. Interns will work alongside firefighters in non-hazardous environments while learning firefighter and medical skills. Cadets who find this profession to be a good fit will also be eligible to apply for the GRFD as full time firefighters if they choose to do so.



## PROMOTIONS

### BATTALION CHIEF

11/05/2021 Ed Braman

### CAPTAIN

01/26/2021 Joel Boyer

09/07/2021 Joaquin Martinez

11/05/2021 Josh Veldkamp

### LIEUTENANT

01/26/2021 Robert Rood

09/07/2021 Jeremy Chesla

09/07/2021 Jonathan VanLente

11/05/2021 Jason Szotko

12/16/2021 Aaron Draper

### EQUIPMENT OPERATOR

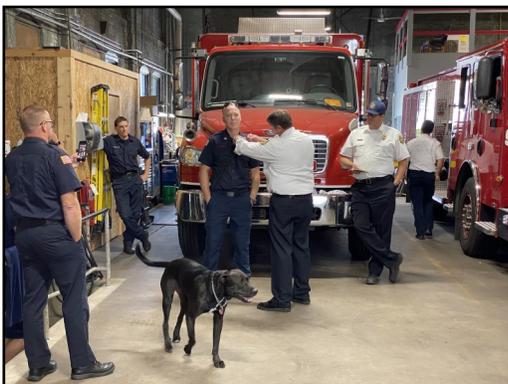
12/28/2021 Tom Felix

12/28/2021 Matt Stevens

12/28/2021 Cody Haisma

12/28/2021 Nic Veldkamp

12/28/2021 Marcus Sapp



## NEW HIRES

As the year ended, 15 new recruits were in the final conditional offer phase of the process, anticipating a January 24, 2022 start date. The Fire Department would like to thank the City of Grand Rapids Human Resources, Attorneys, Fiscal Services, Labor Relations and Risk Management Departments, as well as Med One and Spectrum Health for the significant efforts taken to run this process very quickly and efficiently to help us address our shortage of personnel.



## RETIREMENTS

01/04/2021 Captain Jim Pulsipher

01/05/2021 FF Chris Moleski

05/07/2021 EO Steve Przybysz

07/05/2021 FF Russ Bolter

07/05/2021 EO Rick Bush

07/06/2021 Lt Dave Olivier

07/20/2021 EO Gary Metcalf

07/23/2021 OA III Olivia Hickey

08/02/2021 Captain John Zinn

09/10/2021 Lt Bronson Barnes

11/03/2021 EO David Parish

11/04/2021 BC Colin Kelly

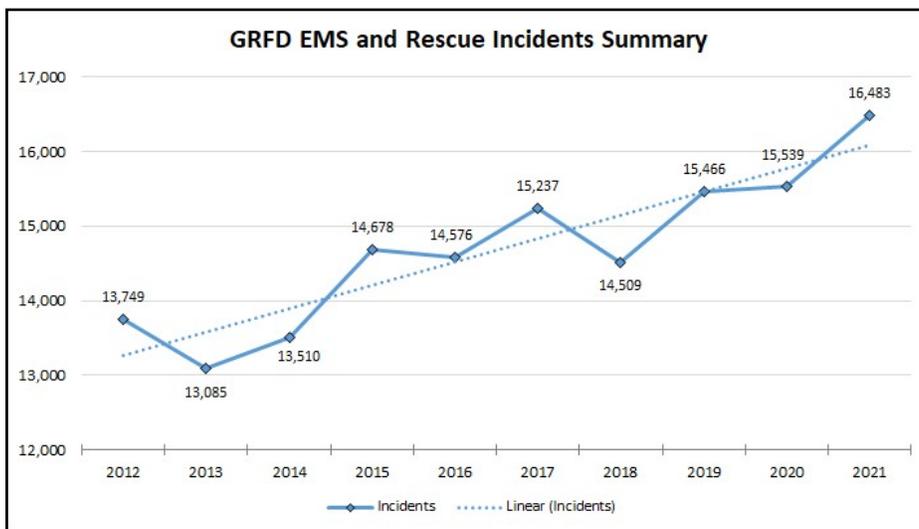
*Thank you to our 2021 retirees for their many years of dedicated service. Together these men and women have served the City of Grand Rapids and fulfilled the mission of the GRFD. We wish you the best in your future endeavors.*

# EMERGENCY MEDICAL SERVICES (EMS) DIVISION

## Statistics

- Medical Incidents - 16,394 (68.72% of total alarms)
- Completed 1390 hours of Hands-on Training, 1512 hours of On-line Training and 78 hours of EMS Instructor Specific Training
- As our Opioid Crisis continues, we provided Narcan to 107 patients, assisted with Narcan delivery 54 times, and arrived on scene to find Narcan had been administered by a bystander 101 times.

2021 Medical Licensure Levels
15 - Licensed EMS Instructor Coordinators
23 - Licensed Paramedics
1 - Licensed EMT - Specialist
86 - Licensed EMT - Basics
75 - Licensed Medical First Responders
28 - Licensed Medical Vehicles were Certified
63 - Individual Medical Licenses were Reviewed



EMS incidents accounted for 68.72% of the emergency incidents in 2021, and accounted for 61.28% of the time personnel spent on scene, compared with 61.14% last year. The overall trend for EMS incidents continues to rise steadily.

## Highlights

- Medical hands-on trainings included pediatric centered airway care, blast injuries and triaging of multiple patients that closely simulated the real care situations found by our responders.
- Gained approval from MDHHS Bureau of EMS, Trauma and Preparedness to teach our own initial EMT courses for our members
- Many of our members were recognized by our own Awards ceremony and Kent County EMS' recognition ceremony. Your fire department cares about the needs of the community, and in many cases citizens are alive today because of the pre-hospital care they received from GRFD.
- All licensed members received CPR Recertification Training



Captain Steve MacBride  
EMS Coordinator

# TRAINING DIVISION

**Mission** *Provide the appropriate training to ensure sustainability and growth at all ranks.*

## Department Training

- Multi-company training resumed after being paused during COVID-19, providing a wide variety of training and development opportunities.
- Provided training to increase City employee and citizen safety through the offerings of CPR classes and Confined Space Entry certification.
- Michigan State Training Funds were used to provide mental wellness training during a “Leadership and Resiliency” seminar.

## Regional Training Center Activity

- Regional Training Center (RTC) hosted the annual Instructor 1 and Pump Operator classes to further develop our members.
- Organizations utilizing our training facility included: Grand Rapids Police Department (SRT and Canine Units), Kent County Sheriff, Michigan State Police, DEA, Michigan Volunteer Defense Force, Kent County CERT, Auto Aid & Mutual Aid Fire Departments (Kentwood, Wyoming, Walker and Plainfield) and GRFD Summer Youth Academy

## Special Events

- Facilitated the launch of the nationally recognized, standardized Candidate Physical Ability Test (CPAT) agility course at our South Annex.

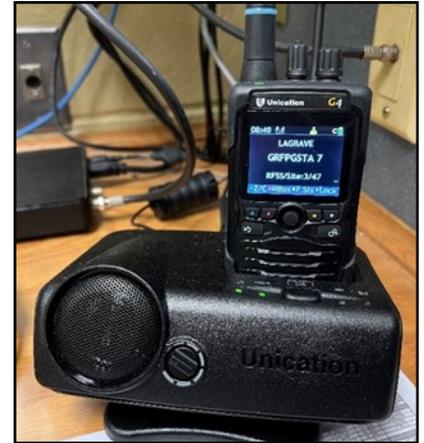


# STRATEGIC PLANNING DIVISION

**Mission** To provide information to support decision making activities throughout the organization.

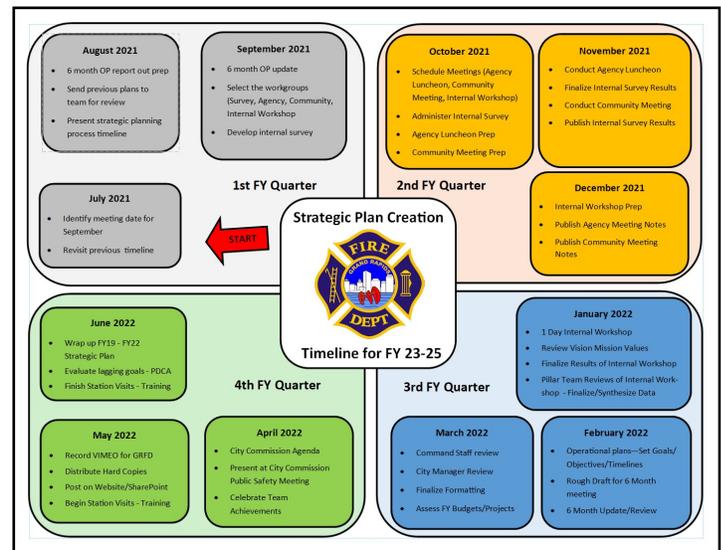
## Planning

- Revamped the Risk Assessment process for Image Trend.
- Started the work of creating a FY23-25 GRFD Strategic Plan by working with our 42-member GRFD Review Team and external stakeholders as well as surveying our entire membership.
- Researched and helped implement a new 800 MHz Station Alerting System to replace our antiquated system that was no longer able to meet the needs of our department.
- Continuous improvement work with dispatch to address system issues with Computer Aided Dispatch.



## Accreditation

- Created a new Standards of Coverage (SOC) document as part of our Accreditation documentation.
- Submitted all documentation needed for the Accreditation process including the Self Assessment Manual and SOC.
- Hosted a site visit by peer assessors from the Commission on Fire Accreditation International (CFAI).
- GRFD was reaccredited at the CFAI hearings in June.
- As part of the Accreditation process, started work on 13 continuous improvement recommendations received from the peer assessment team.
- Updated the Self Assessment Manual to the 10th Edition



# INFORMATION SYSTEMS COORDINATION

**Mission** To ensure that GRFD personnel have the necessary information systems technology.

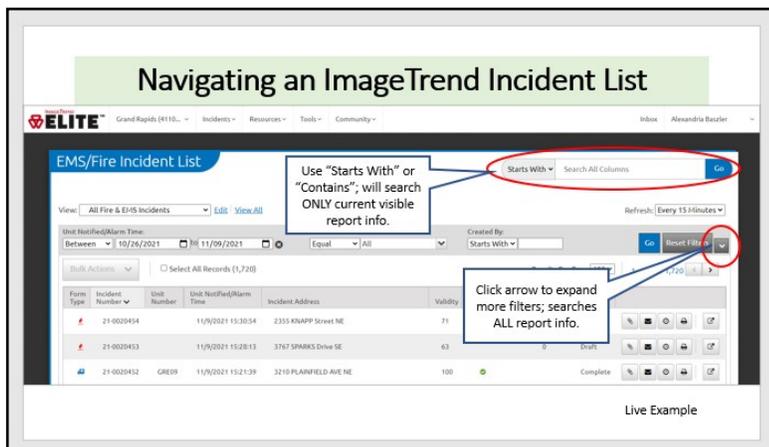
- Provided technology and equipment assistance to employees working from home due to COVID-19 restrictions.
- Replaced station computers and equipment as necessary.
- Updated fleet Mobile Data Terminals including BIOS and drivers.
- Updated Sierra Wireless devices.
- Installed internet in the South Annex
- Upgraded station wireless access points
- Introduced Greg DeHaan from Dewpoint for station desktop support



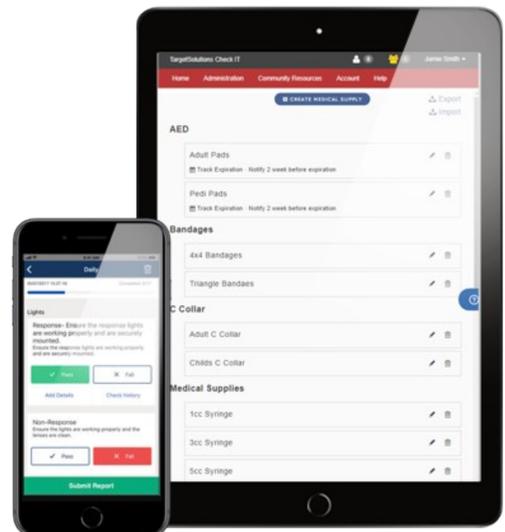
# PERFORMANCE AND MANAGEMENT REPORTING

**Mission** To ensure GRFD records management needs are met by developing and enabling an efficient means of data entry, extraction, and analysis.

- Assessment of NFIRS documentation training needs
- Initial review of key incident documentation basics made available to all suppression staff. Intentions to refine into short video recordings for 2022
- Improved ways for suppression staff to report issues to Prevention or other special units through incident reporting (Commercial Building and Housing Condition Referral)
- Helped develop a more efficient way to track status of billable incidents
- Wrapped up final data extracts for 2021 Standards of Coverage, necessary for re-Accreditation
- Assisted with yearbook project - Pulling data, project management, and design
- Worked with Program Managers to update maintenance entries and work requests in Check-It.



Excerpt from NFIRS Documentation Training Presentation

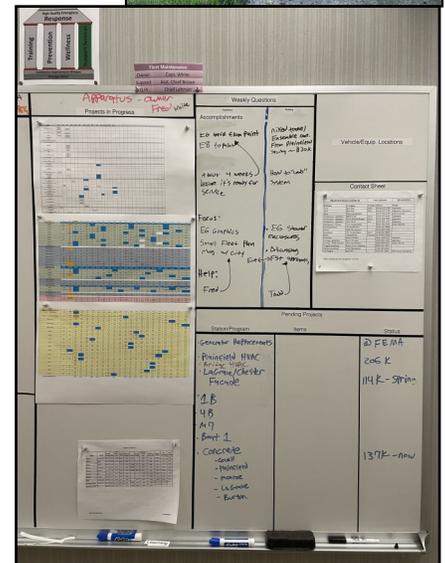


# BUILDING & FLEET MAINTENANCE

**Mission** *Deliberate and planned facility and vehicle maintenance*

## 2021 Highlights

- Facilities Maintenance Headquarters was moved to our South Annex which now also houses our Candidate Physical Ability Test (CPAT) course.
- Emergency Vehicle Technicians (EVT) and Fire Station Technician (FST) programs grew in both size and scope to address the large workload and in order to provide better service.
- New specialty equipment purchases, including a tech rescue hauler and dive team rig.
- Several small fleet vehicles went into service and/or were modified for additional use including staff cars, the FST pickup, the EVT service truck, and a new Car 1.
- Addressed funding of long range capital maintenance plan for our fire stations and re-appropriated leftover grant money to replace severely outdated fire station generators.
- Stations improvements included concrete and HVAC upgrades, a couple of roof replacements, a station kitchen remodel and numerous smaller remodeling and general maintenance projects.
- Our own tech rescue team has had to shore part of the basement at fire headquarters awaiting a longer term solution from a structural engineer. Additional foundation and façade work that must take place as soon as possible include repairs to the hose tower at Chester St. and addressing additional settling of the foundation at Burton St.
- Exhaust removal systems were installed at all of our fire stations.
- With the help of a team from the University of Michigan we set up a 30-year asset management plan to help lay out future station remodels and put the buildings on a schedule for roof replacement, landscaping needs, cement work, and other necessary upkeep.



# GRANT PROGRAM

**Mission** *To secure funds to supplement program budgets.*

GRFD grant writers work hard to relieve the burden on our strained fiscal resources by allowing us to complete projects that we otherwise wouldn't have been able to, and by saving precious capital assets for use in other vital areas of our organization.

- Over 160 members completed O2X Training, a human performance program focused on improving physical, mental and emotional wellness.
- Completed the 2018 FEMA Assistance to Firefighters Grant (AFG) award for station Exhaust Removal Systems to remove carcinogenic diesel exhaust from our stations.



- Used excess grant funds to purchase four fire station generators (\$420,000), 12 treadmills (\$39,000) and 12 stair mills (\$38,000) as well as continuing education from O2X (\$57,000).
- Recipient of FEMA Fire Prevention & Safety Grant (\$284,323) to fund our Residential Safety Program.
- Recipient of AFG (\$466,948) to fund new vehicle extrication tools and equipment, specialized training for all extrication team members and all new ancillary rescue equipment (stabilization, airbags, accessories, etc.).



*Crews testing extrication equipment to be purchased with grant funds.*

# EMERGENCY MANAGEMENT

**Mission** Working toward creating a resilient and prepared community through preparedness, response, and recovery.

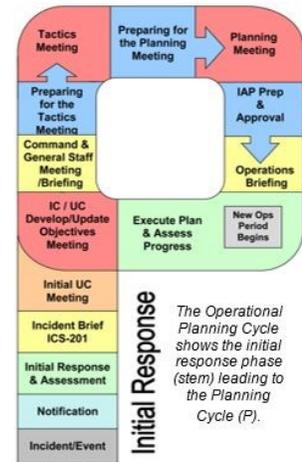
Finding ways to continue work on key projects and grow the City’s Emergency Management program while adapting to the COVID-19 pandemic was the focus for the year.

## Major Accomplishments

- Bi-weekly virtual EOC briefings to navigate the impacts of COVID-19 on critical services.
- Attended the FEMA Integrated Emergency Management Course that was hosted by the City of Grand Rapids and provided training and exercise opportunities to augment operational coordination and communication.
- Developed an all-hazards, whole community Emergency Operations Plan (EOP) structured with Emergency Support Functions (ESF) that aligns with the structure of Federal and State plans. The plan provides a solid framework for how the City prepares for, responds to, recovers from and mitigates future incidents.
- Collaborated with Kent County and Ottawa County to produce an updated Regional Hazard Mitigation Plan which provides a framework to minimize the impact of future disasters and also makes the City eligible to receive Hazard Mitigation grant funds.
- Lead the development of a Continuity of Operations Plan (COOP) to ensure mission essential functions of the City are uninterrupted when emergencies arise.



**Allison Farole**  
Emergency Manager



- Procured the incident management tool, VEOCI, to improve operational coordination and communication during incidents. Information is shared on a single platform and provides communication for personnel in the field, at the command post and in the Emergency Operations Center.

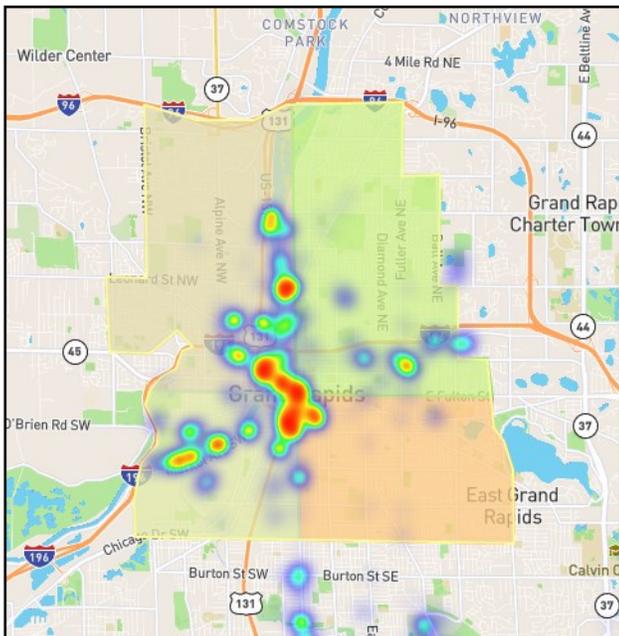
# HOMELESS OUTREACH TEAM (H.O.T)

**Mission** *Fostering supportive relationships with people impacted by homelessness through outreach, education and advocacy.*

**Team Values** Health - Welfare - Safety  
Harm Reduction - Advocacy - Outreach

## 2021 Highlights

- Collaborating with Network 180 to embed Social Workers, Recovery Coaches, and Peer Support Workers within the team.
- Relationship building among homeless individuals, agencies, businesses, residents and officials.
- Research and promotion of a storage program currently in the pilot phase.
- Fostered a relationship between Mel Trotter Ministries and Crossroads Bible Church to provide a warm and private area for weekly showers, breakfast and outreach.
- Advocated for removing barriers at shelters to allow for couples to be sheltered together and a storage program so individuals can retain their possessions while attending appointments.
- Supported Kent County Health Department for several mobile vaccine clinics.



TEAM METRICS	
Business/Agency Contacts .....	240
Outreach Contacts.....	7,305
Observed Sleeping Unsheltered (instances)....	1,342
Camps Visited .....	67
Diversions (Jail/Medical) .....	34
Substance Use Disorder Assessments.....	42
Mental Health Referrals .....	23
Field Interactions.....	1,593

## WELLNESS

### External Trainings, Lectures and Presentations

#### Safety Standdown Keynote Speaker

Dr. Ross Sherman, Grand Valley State University  
Exercise Science Department Associate Professor

#### Financial Wellness Lectures

- Pension Windfall Elimination Provision  
*Social Security Administration*
- Family Budgeting; Financial Freedom and Debt  
*Mark Moerdyk, Financial Peace Coach*
- Financial Peace University offerings  
*City of Grand Rapids Wellness*



#### General Wellness Lectures

- How Cumulative Stress can Result in Physical Pain  
*Captain Jim Harrison, Canton Fire Department*
- PTSD in the Fire Service  
*Battalion Chief Jason Murray, Rochester Hills Fire*
- Compassion Fatigue Lesson  
*Encompass*
- Pre-Diabetes Training  
*Blue Cross Blue Shield (via Microsoft Teams)*

### Internal Training

- Correlation between Sleep and Cancer  
*GRFD Captain Paul Mason*
- Hormone Testing: Testosterone  
*GRFD EO Lorelli*
- Dirty Helmet Syndrome  
*GRFD Firefighters Ledoux and Ingersoll*



### Recurring

- Members continue to use O2X apps funded by AFG Grant money.
- Cardiovascular stress tests were provided at the annual physical and this is the first year of a 3-year test to gather information on testosterone levels in GRFD members.
- The GRFD Wellness committee continues our partnership with Robertson Brain Health which offers short monthly trainings.



Better Brain Chemistry Drives Better Performance

The Grand Rapids Fire Department was selected by Oregon Health and Science University to test their newly developed Advancing the Wellbeing of Wildland Firefighters program as it applies to Structural Firefighters. Thirty individuals will have taken a pre-test and survey before starting the program and a post-test 90 days and 6 months after completing the program. By providing the test subjects for the class, it opened the whole department into having access to the full wellness program of 13 lessons.

## WELLNESS



Dr. Sally Talbot from Health Motion Physical Therapy did two lessons live, via training units (24 lessons total) to the GRFD. During the spring, she concentrated on injury identification and stretches. From this lesson, approximately 26 people sought treatment. The recurring injury identified was shoulders, necks and lack of upper back mobility.

From this analysis, the PPE committee is reviewing our suspenders and the Mask Room is testing some SCBA modifications (specifically adding a chest strap and possibly modifying the waist belt). A second lesson was given this winter, specifically with our older firefighters in mind on injury rehabilitation.



*GRFD members and their families participated in the 20th Anniversary 9/11 Memorial Stair Climb.*



## SAFETY COMMITTEE

**Mission** *Completing investigations, identifying safety concerns and making recommendations to improve safety within the organization.*

- Monitored best practices implemented to provide safer workplace practices for our members and the community.
- Focused on accident and injury prevention as well as investigation.
- Reviewed and investigated 47 injuries and 21 accidents.
- Noted a 13% decrease in injuries and an increase of 2 accidents from 2020.
- Made progress in reporting and data collection in an effort to start tracking trends.
- Completed an extensive review of the GRFD Line of Duty Death (LODD) and Line of Duty Injury (LODI) process.

**Committee Members:** Training Chief Bill Race, Captain Mark Fankhauser, Captain Kevin Carmel, Captain Dan VanderHyde, Firefighter Steve Adamczyk, Firefighter Matt Stevens, and Deputy Chief Ron Tennant as counsel.

# COMMUNITY RISK REDUCTION - FIRE PREVENTION

**Mission** *Protecting against loss of life and property through education and prevention efforts.*

## Inspections and Building Assessments

- Focused on highest risk buildings through the Operational Permit program. Delays were experienced in the annual inspection cycle due to many local businesses having new maintenance staff lacking institutional knowledge. This necessitated GRFD Inspectors to provide additional education on fire codes.
- Worked with various city departments to develop rules for Social Zones/Districts to adapt to the requirements of social distanced gathering.
- Provided education and enforcement follow-up on nuisance reports associated with the Recreational Fire Permit Program.
- The Fire & Life Safety (FLS) Program experienced delays in administering the maintenance of fire protection systems due to contracting companies hiring inexperienced personnel. Historical level of compliance of 90% for inspection, testing and maintenance was still able to be achieved.
- Fire suppression crews continued inspections of high risk occupancies through our Risk Assessment Program, making key fire protection and hazard information available during emergency response.
- Provided training events to educate operators of Mobile Food Preparation Vehicles (MFVs) on safety regulations to encourage the growth of the food truck scene in the City.
- Worked with the City's Mechanical Department to identify companies who need to install additional carbon dioxide (CO<sub>2</sub>) detection and alarm systems as part of their beverage dispensing operations.



**The Property Saved Rate** is calculated by comparing fire property losses against the pre-incident value of the property. These save rates have remained high, varying only slightly from year to year. 2015 was the only year since 2012 that property saved rates dipped below 95%. Looking at the past decade, the trend shows a slight decrease in the rate of property saved.

# COMMUNITY RISK REDUCTION - FIRE PREVENTION

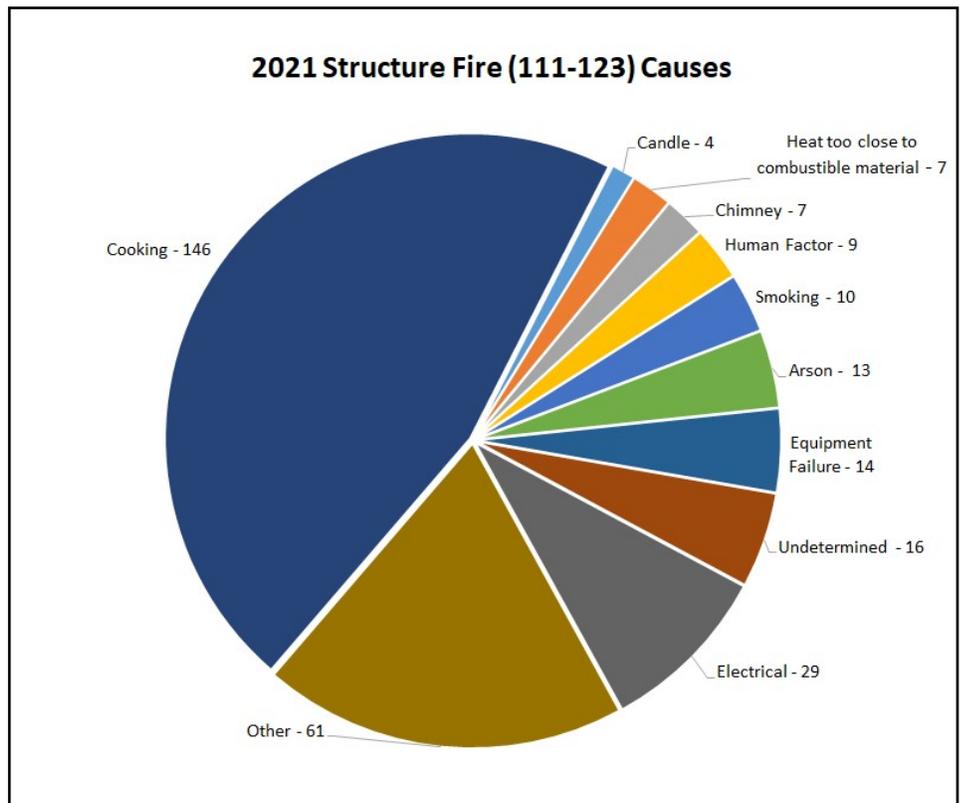
## Construction/Plan Review

- Providing technical expertise in the area of fire protection system installation and acceptance for new building and remodeling projects starting with pre-construction meetings with builders and developers and continuing during plan reviews and consultation with contractors.
- Performed 350 Fire Alarm and Suppression System Plan Reviews due to strong construction activity in the City.
- Completed 850 Fire Alarm and Suppression System rough-in and final inspections with approximately 50 of the final inspections being for larger projects that required the participation of two to five inspectors.



## Investigations

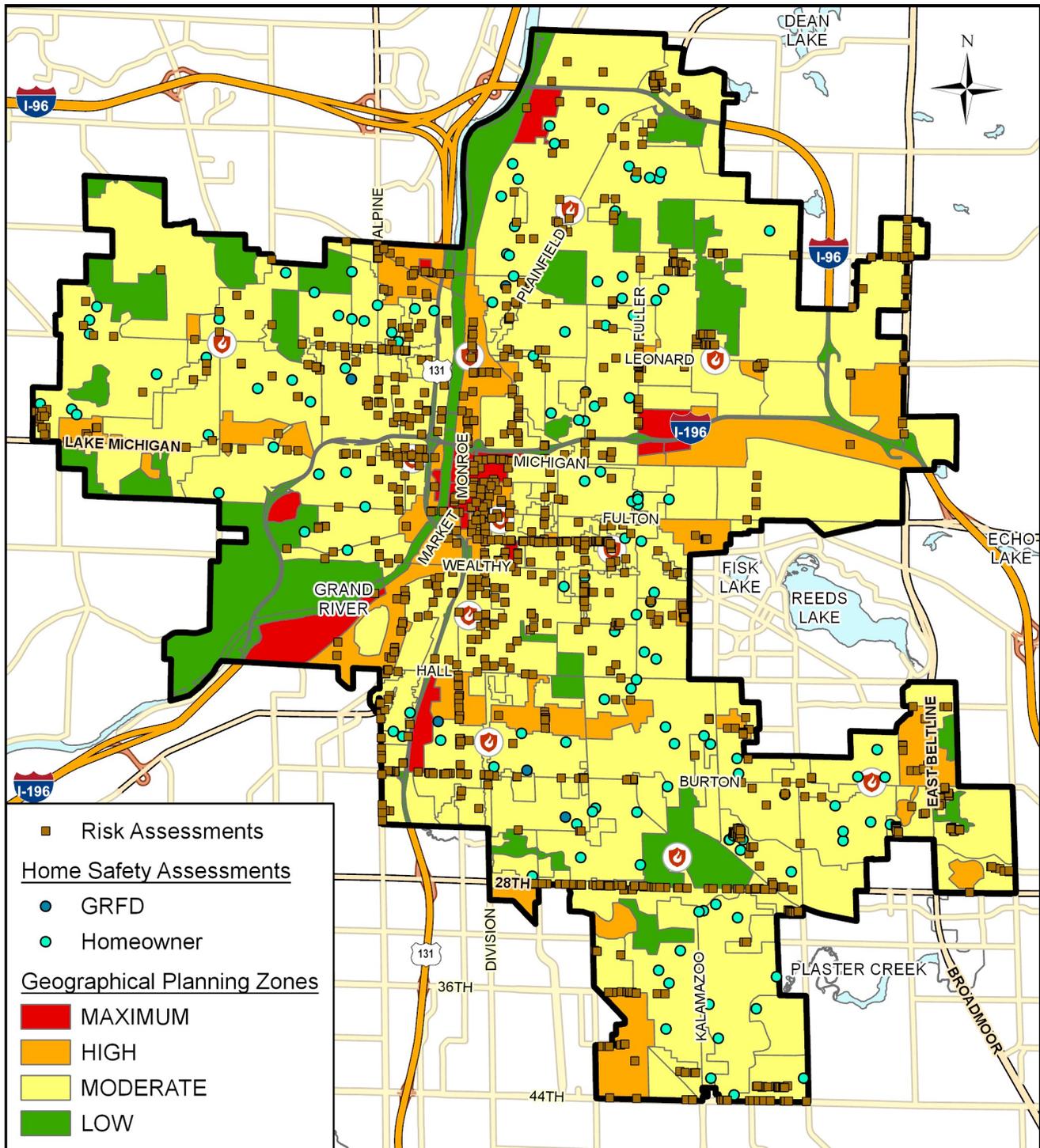
- There were no fire fatalities during the year and the amount of fire-related injuries to civilians and firefighters also decreased.
- Due to four large-loss structure fires, the total fire loss for the year increased by over \$2,000,000.
- Investigators continue to work with other agencies on larger incidents and suspicious fires.
- Support received from Michigan State Police and Kent County Sherriff's Department canines on



determining the use of accelerants, from the Federal Bureau of Alcohol, Tobacco, Firearms and Explosives in helping determine cause and origin and from the GRPD who aid in collecting evidence, interviewing witnesses and provide further investigation into suspected incendiary fires.

# Risk Assessments/Home Safety Assessments

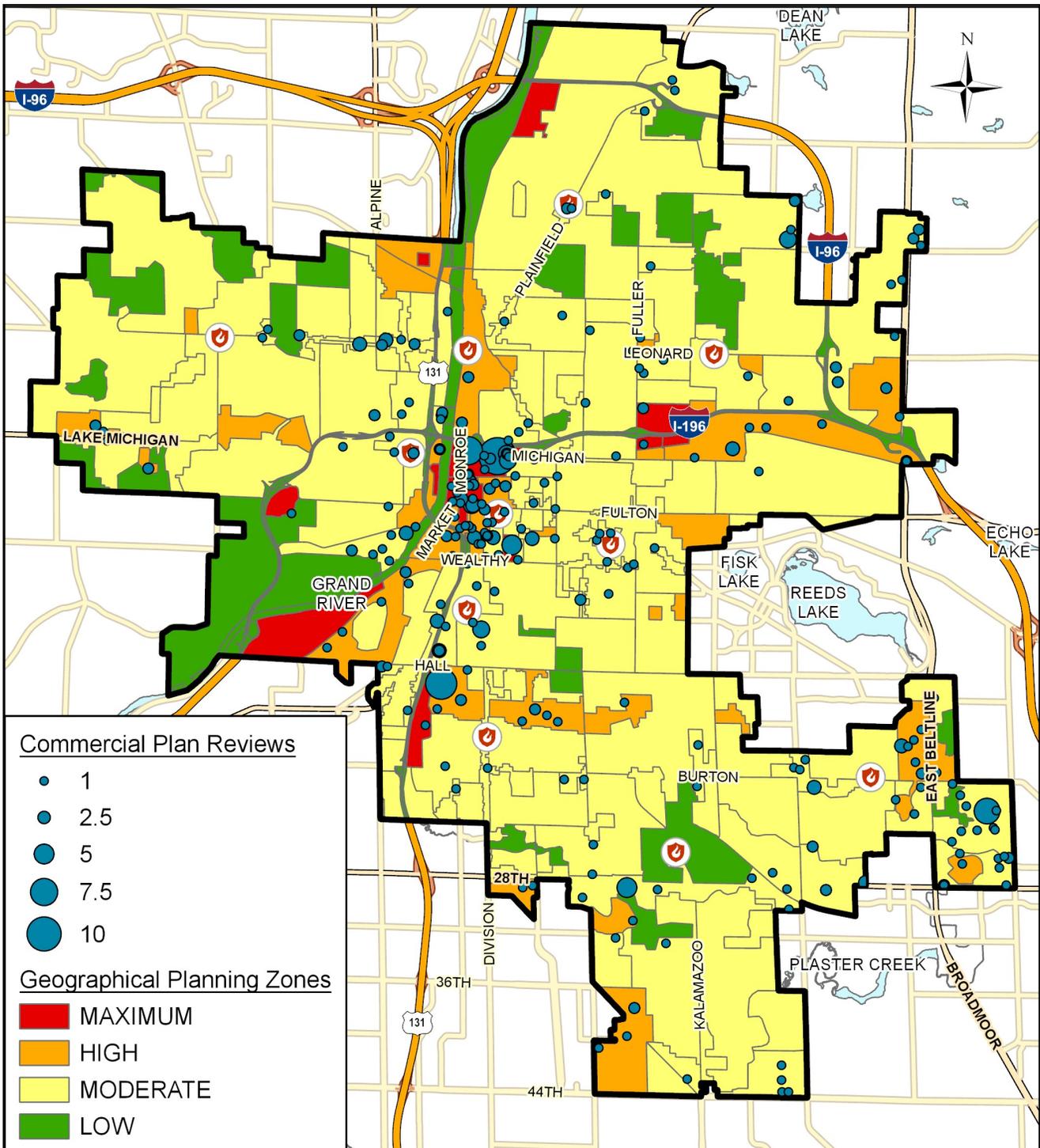
This map displays the combined efforts of prevention and suppression personnel to mitigate hazards through commercial property risk assessments and home safety assessments.



	Bridge	Burton	Chester	Covell	Division	Franklin	Kalamazoo	La Grave	Leonard	Monroe	Plainfield	Citywide
Home Safety Assessment	7	11	17	21	11	1	42	0	9	13	18	150
Risk Assessment	123	105	124	66	105	94	176	109	133	119	52	1,206

# Commercial Plan Reviews

This map displays plan review activity for new construction and renovation projects, which correlates with an increase of potential risk in the community related to economic growth.



	Bridge	Burton	Chester	Covell	Division	Franklin	Kalamazoo	La Grave	Leonard	Monroe	Plainfield	Citywide
<b>Count</b>	82	55	13	10	26	31	28	72	48	20	7	392
<b>Percentage</b>	20.92%	14.03%	3.32%	2.55%	6.63%	7.91%	7.14%	18.37%	12.24%	5.10%	1.79%	100%

# COMMUNITY RISK REDUCTION - FIRE PREVENTION

## Residential Safety Program (RSP)

**Mission** *To deliver fire safety education directly to our citizens while conducting home safety assessments and installing smoke and carbon monoxide (CO) alarms.*

- Nationally recognized as the best program of its kind, the RSP continues to support GRFD's federally funded initiative towards home fire Community Risk Reduction (CRR).
- 994 smoke alarms and 373 CO alarms were installed in 150 homes throughout the year.
- Due to COVID-19 challenges, GRFD provided smoke alarms to homeowners with a self-installation option where an online assessment was completed along with an educational phone conference.
- 15% of removed smoke alarms were found to be inoperable and 68% of homes assessed had two or less working smoke detectors installed.
- Since 2013, 66,098 smoke and 9,949 CO alarms have been installed in 10,960 homes.

*Program coordination with Grand Rapids Public Schools, American Red Cross, Bethany Christian Services, Spectrum Health Services, Disability Advocates of Grand Rapids, DTE Energy, neighborhood associations, Grand Rapids*



## Public Education

- Opportunities to educate the public about fire safety were limited due to lockdowns and restrictions put in place due to COVID-19.
- Provided virtual fire safety education to elementary and secondary schools for children in all grade levels, as well as to parents of school-age children through the Grand Rapids Public School (GRPS) Parents University program.
- Our Residential Safety Program implemented a Self-Install Program, including a virtual education component to continue equipping homes with the required number of smoke and carbon monoxide alarms.

# COMMUNITY RISK REDUCTION - FIRE PREVENTION

## Fire Match Program

**Mission** *Assessing a child's level of fire interest and providing early intervention through fire safety educational tools.*

- An early year influx of referrals due to loosened COVID-19 restrictions ended in a near average number of 24 referrals for the year.
- Working to update the current Grand Rapids Fire Match Program brochure.
- Partnering with Kent County Probation, Child Protective Services, Michigan Department of Health and Human Services and Wyoming Fire Department, Grand Rapids Public Schools and the counseling agencies of DA Blodgett, Arbor Circle and Wrap Around.

### 22 of 24 juveniles received education:

- 13 completed the 6-month monitoring period
- 5 are currently in the 6-month monitoring period
- 2 received education, but are too young for monitor
- 1 placed in the custody of Kent County Courts
- 1 lost contact after moving



## 2021 BATTALION CHIEF SUMMARY

Our highest ranking suppression officers direct large-scale emergency scenes, bring direction from administration to our crews and tend to the needs of suppression personnel. They provide coordination of community interaction opportunities (CIO's), personnel physicals, accident and injury investigations and manage Covid related-issues. Additional work is done to provide oversight of personnel interactions with Training, Emergency Medical Services and Prevention. They also have a focus on providing input into the professional development of our employees. The South Battalion Chiefs have the additional responsibility of managing daily personnel staffing to assure an effective response.

### NORTH BATTALION

#### Dave Noorman

- Vehicle Extrication
- Machine Extrication



#### Jack Johnson

Special Operations

- Tech Rescue
- Hazmat Response
- Water Rescue



#### Collin Kelly (Retired), Ed Braman

- Training Liaison
- Mutual Aid Liaison
- Gerald R. Ford Airport Liaison



### SOUTH BATTALION

#### Mark Noorman

- Apparatus Inventory
- Organization



#### Eric Freeman

- Recruitment
- Outreach



#### Kathleen Thompson

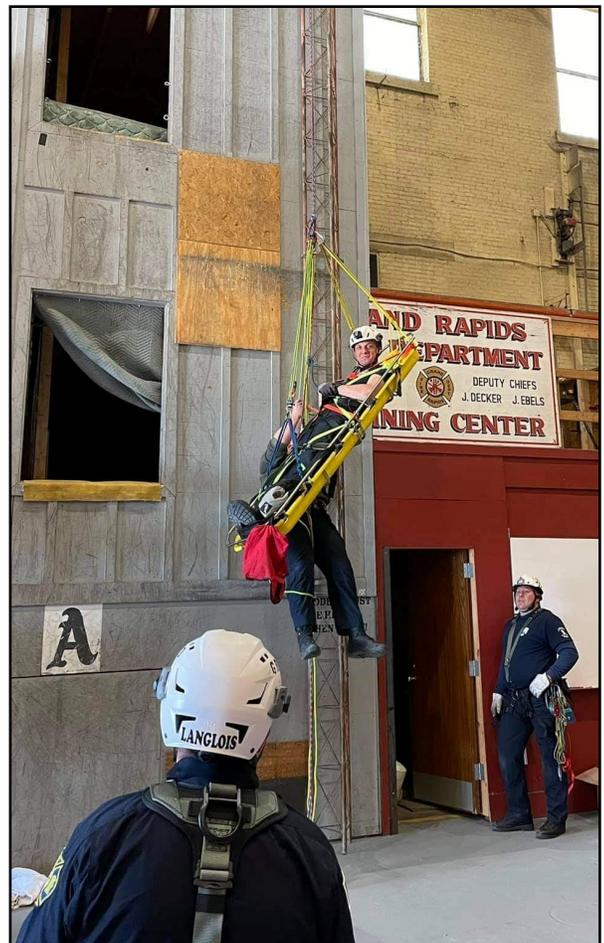
- Wellness Program Manager



# SPECIAL OPERATIONS

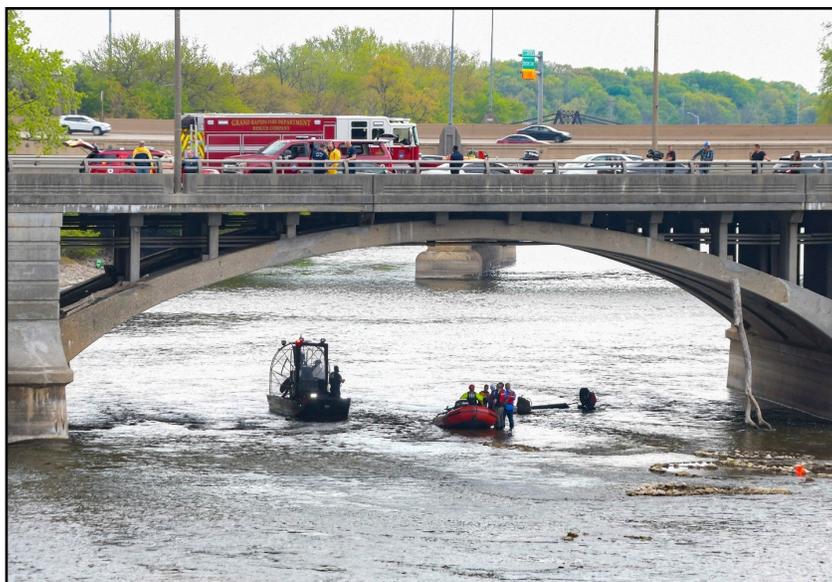
## TECHNICAL RESCUE

- High risk Spectrum Health elevator entrapment rescue
- Team focus on response and increasing initial and continuing education training.
- Team members received training in the most up to date techniques during scheduled in-house trainings as well as outside training that included: Machine Rescue Operations, Rope Rescue Technician, Trench Rescue Operations and Building Collapse Technician.
- Rescue 2 increased their capabilities with an enhanced equipment cache while work began to replace Tech 1 (Heavy Rescue) and Tech 2 (Air Delivery Vehicle).
- Retirements of two founding team members who laid a strong foundation and provided leadership to move the team forward took place. Thanks to Lt. Bronson Barnes and BC Collin Kelly for their years of service and sacrifice.



## WATER RESCUE

- Personnel were called for service 18 times throughout the year resulting in four persons rescued from the Grand River.
- Utilized our Airboat for both water and non-water related alarms including 3 rescued individuals from areas too shallow for other watercraft and for ventilating large commercial buildings.
- Completed Phase I of establishing a Dive Rescue Team with members achieving their open water dive certifications.
- Working towards replacing Boat 1, which has served us well for over 24 years, as well as expanding our capabilities, equipment and training in the coming year to prepare for the proposed changes to the Grand River



## MICHIGAN TASK FORCE 1 (MI-TF1)

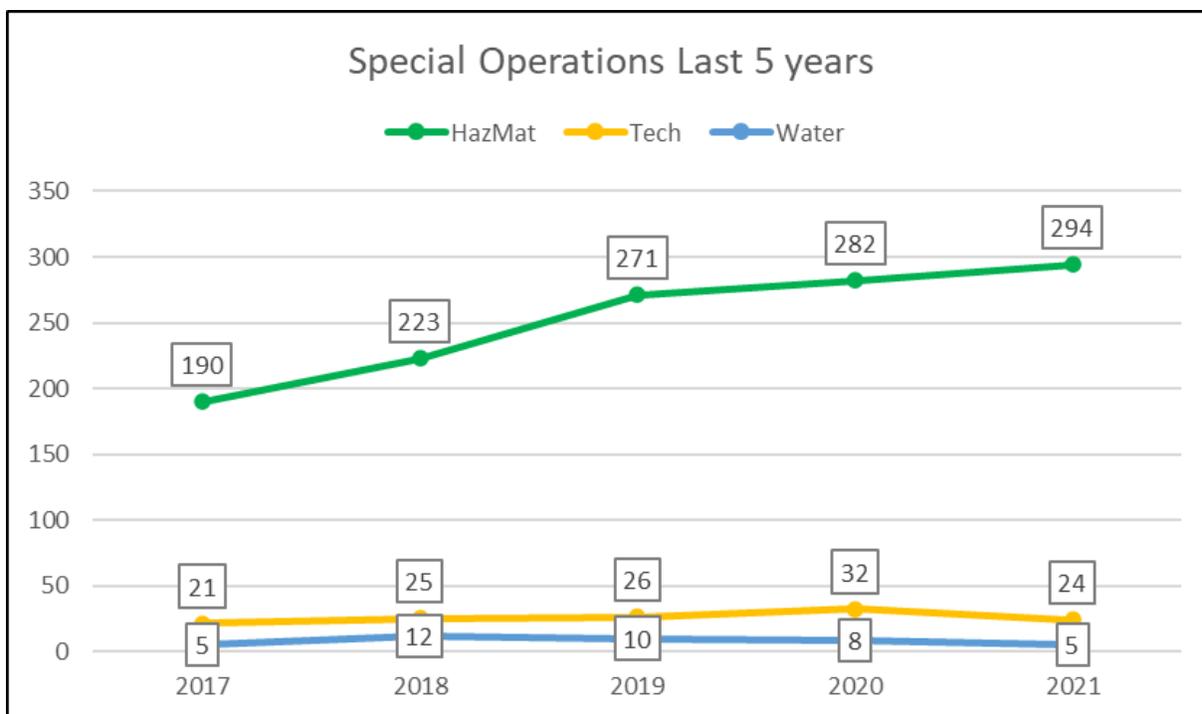
MI-TF1 is a deployable intra- and interstate task force or mission specific single resource that meets the needs of local, state or federal jurisdictions for natural or man-made disasters. The team consists of over 130 members ranging from first responders, emergency department physicians, structural engineers, heavy equipment operators, and canine search specialists.

- GRFD members completed over 500 hours of MI-TF1 training including water rescue, collapse rescue, rope rescue and land navigation. Additionally, participated in a deployment exercise that included three days of continuous real-world simulations that tested all critical elements of the Task Force to ensure operational readiness.
- In August, one GRFD member was deployed to the most severely impacted areas of Louisiana for eight days as part of a Collapse Rescue Task Force with Swiftwater/Floodwater capability, providing reconnaissance, searching for victims, and providing much needed humanitarian aid to residents in remote areas that were heavily impacted.
- The GRFD continues to be involved in the development of the state's first ever Helicopter Aquatics Rescue Team (HART). This is a joint effort between MI-TF1 and the US Army National Guard, which will give the state the resources to affect rescues that otherwise would be impossible or too dangerous by other means.
- The GRFD is proud to support the mission of MI-TF1 and looks forward to continued involvement as part of Michigan's premier special operations response team.

## HAZARDOUS MATERIALS

With COVID-19 restrictions lessened, training has been on the rise, training five more members to Technician Level and increasing the team to 34 Technicians with one member at Operations Level.

- Critical trainings included: Hazmat IQ, Decon, CO2 Response, Radiation Response, Advanced Air Monitoring, Chemistry 1 & 2 and Technician Level Training.
- New equipment was purchased with grant funding including: St. Gobain Level A suits, Mirion Accurad personal meters, and RadEye B20 detectors. Night vision and decon spraying equipment was purchased and an LPG tank was donated from Tri-Gas.
- Maintained relationships with Region 6 partners through mutual aid, training, maintenance and assistance to these organizations with such things as pressure testing new level A suits.



## PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Program Goal:** To ensure that each department member has two sets of useable gear that is less than 10 years old.

- Continued to upgrade the PPE for members of the department by purchasing 38 sets of Morning Pride turn-out gear, providing a greater level of comfort and a higher visibility reflective material.
- Issued back-up particulate blocking firefighting hoods to all personnel to reduce our exposure to carcinogens.
- Each shift has representatives who work to ensure that all firefighters have the gear they need to stay safe.



## RADIOS

**Program Goal:** The radio program aims to increase firefighter safety and awareness through improved radio communications.

- Engaged in maintenance and ongoing training to help ensure improvements in radio communications.
- Continued to use the 800MHz system, addressing 41 reported radio issues, with the majority being remedied under warranty.
- Radio straps issued to recruits to align with industry best practices for portable communications.
- Specialty teams are looking at accessories to allow the portable radios to serve them better.
- Station alerting has transitioned to use the 800MHz system.

## SELF CONTAINED BREATHING APPARATUS (SCBA)

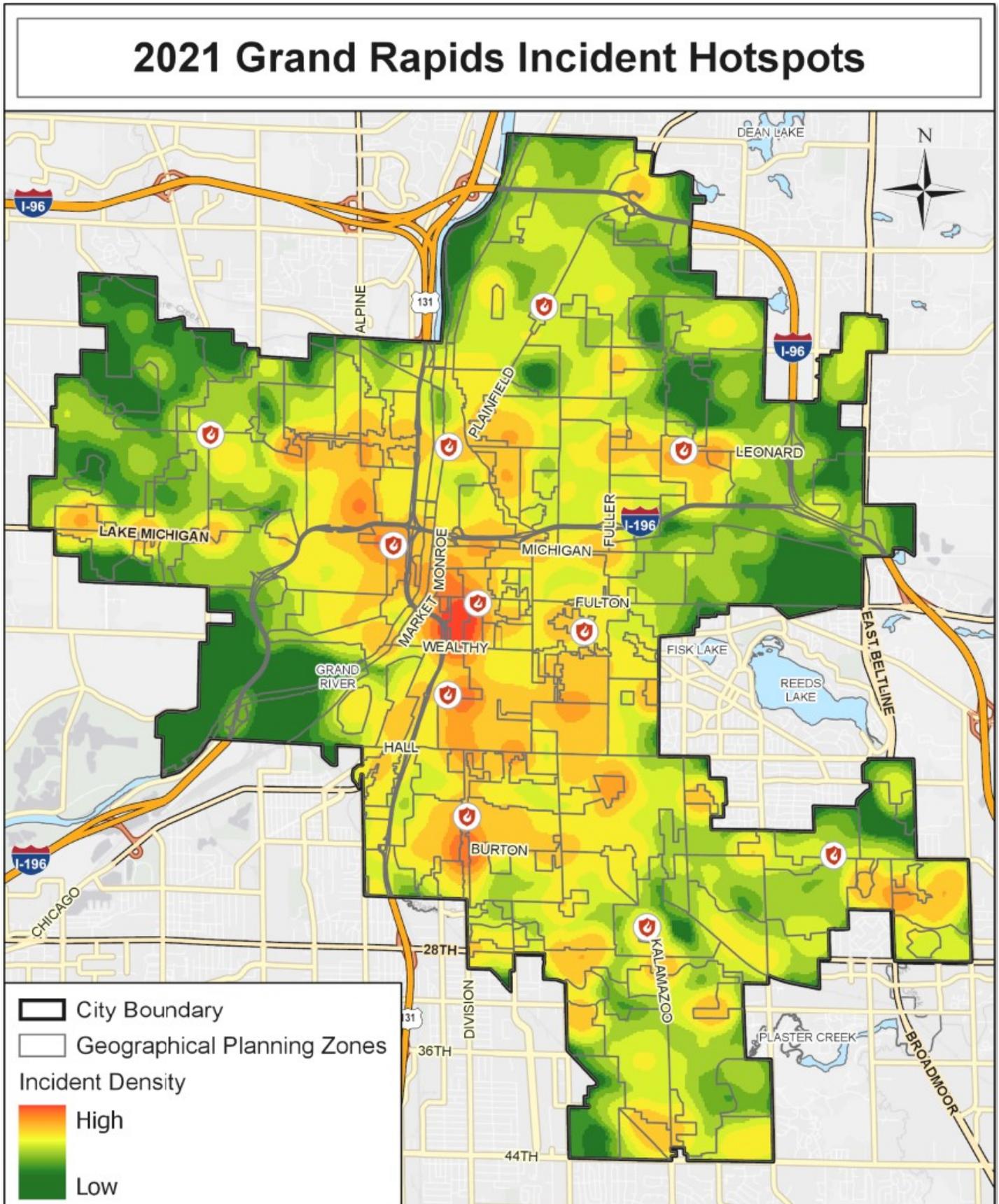
**Program Goal:** To provide reliable SCBA equipment and repair for our department.

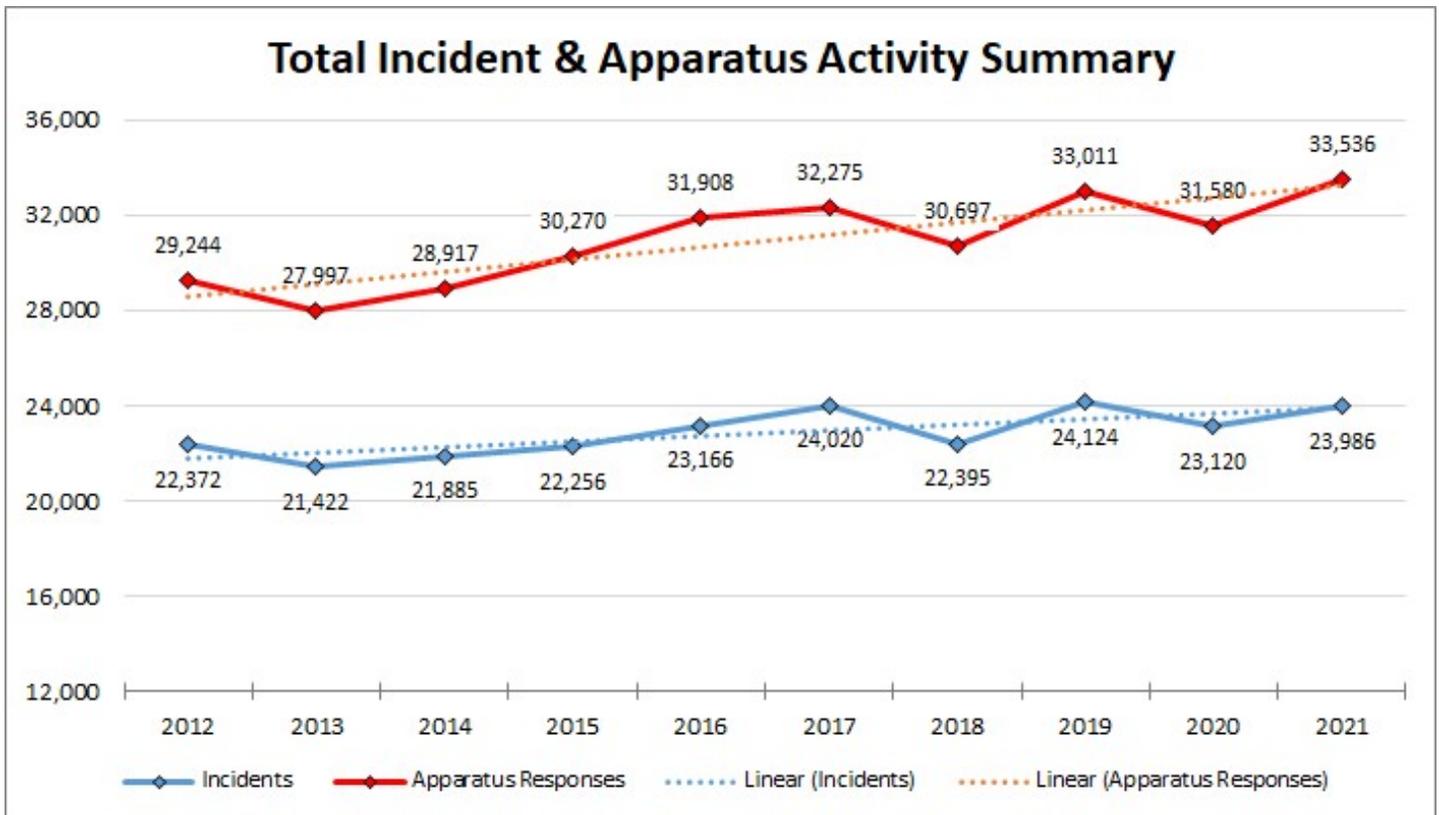
- Flow testing completed on all GRFD SCBA's (158), RIC packs, specialty team equipment and police equipment.
- Department-wide annual Fit Testing and N-95 Fit Testing completed.
- Finished cycling bottles through the hydrostatic testing process just ahead of the 5-year service mark.
- Warranty repairs have been on the rise as the equipment passes it's half-life.
- PASS alarm batteries changed on every SCBA in April and October.
- Continued to work with service contractors and SCOTT Safety to maintain our equipment and improve its functionality and reliability.



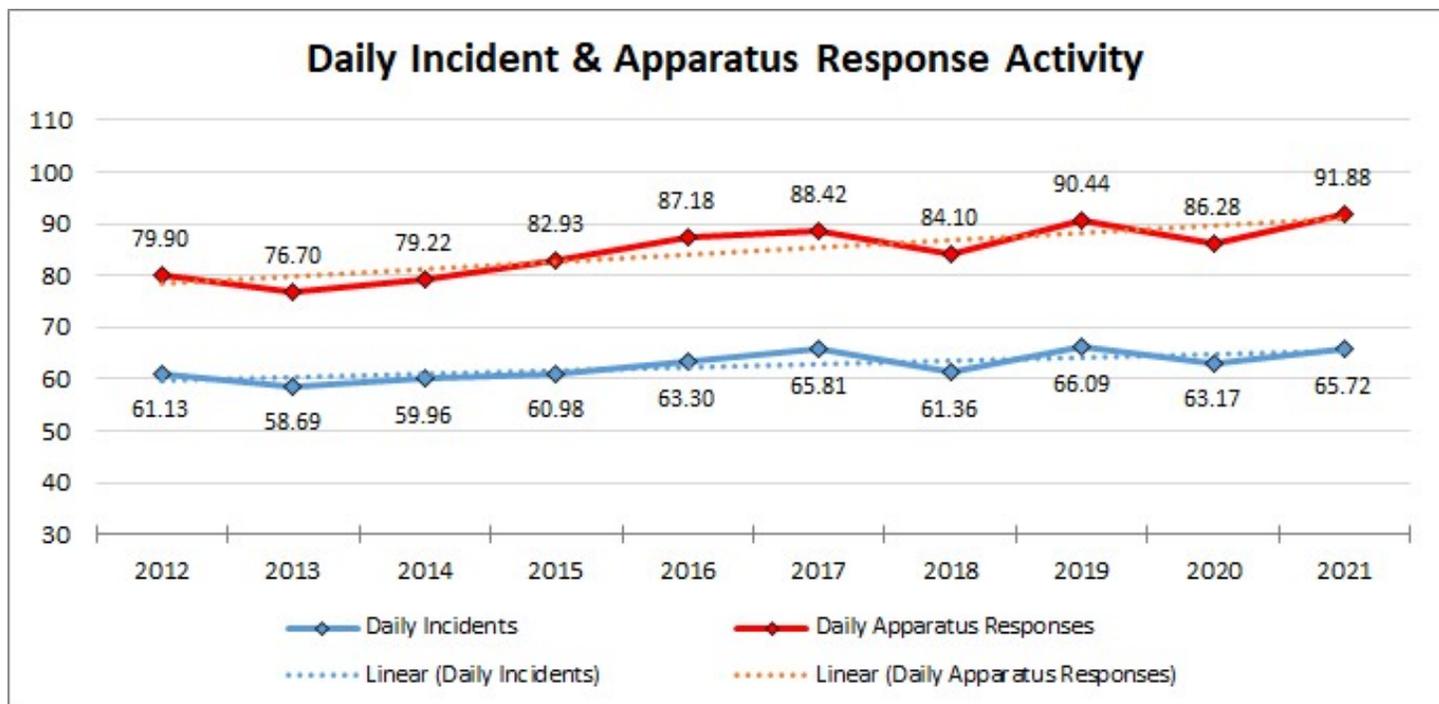


# TOTAL ACTIVITY SUMMARY



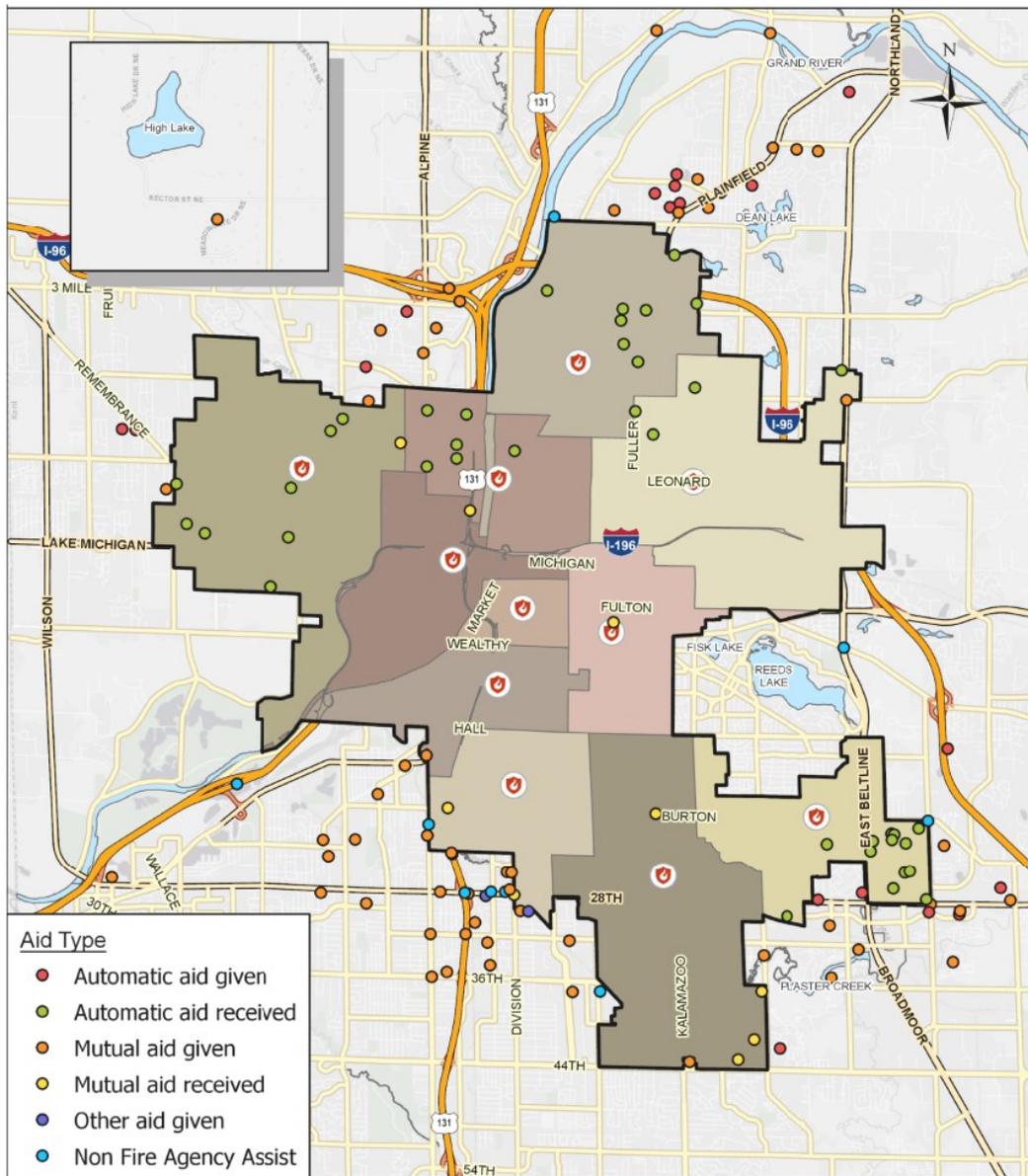


The total incident count rose by 866 in 2021, for an increase of 3.75%. Apparatus responses rose 6.19%. The disparity between incident counts and apparatus counts is accounted for by a change in responses to fire alarms in higher risk buildings, which now require four apparatus instead of three. The overall trend lines continue to rise, with four of the last five years being in the top five for incident activity.



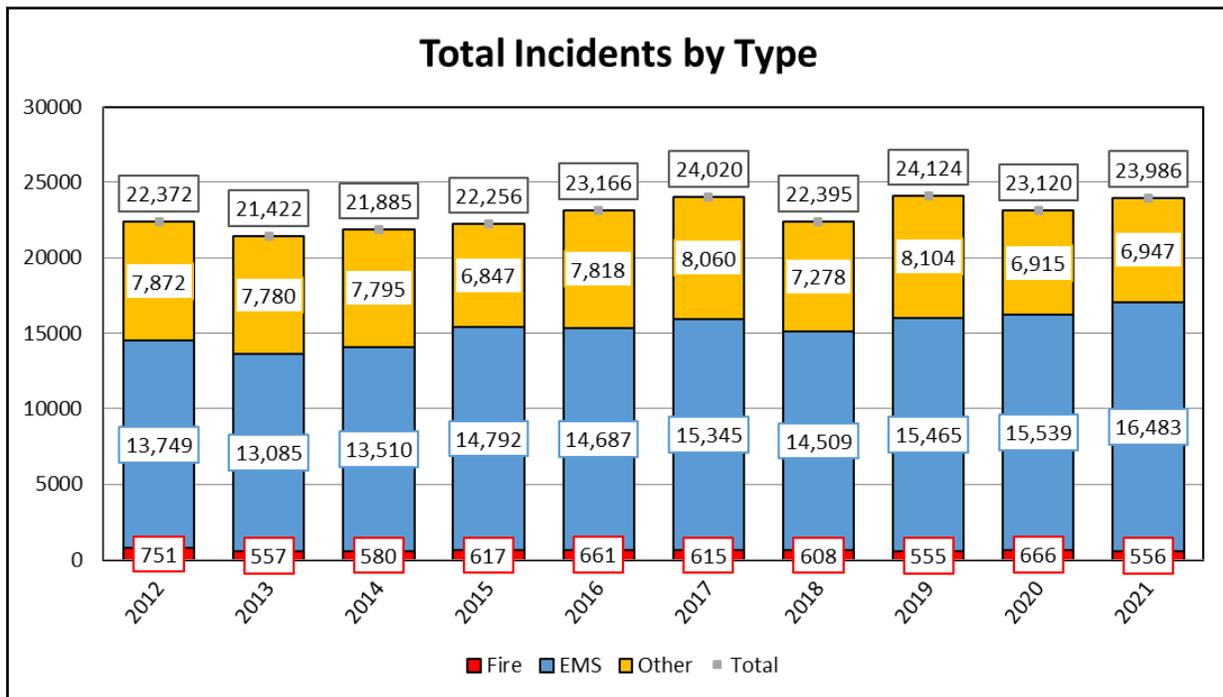
# AID GIVEN OR RECEIVED

The Grand Rapid Fire Department coordinates with its neighbors and other county agencies to provide automatic and mutual aid. The map below shows the locations of these incidents.



City	AID RECEIVED			AID GIVEN			Total	Total Responses
	Automatic aid received	Mutual aid received	Total	Automatic aid given	Mutual aid given	Other Responses outside of GR*		
Cutlerville	0	1	1	0	0	0	0	1
East Grand Rapids Public Safety	0	2	2	0	0	0	0	2
Grand Rapids Township	0	0	0	0	1	1	2	2
Grandville	0	0	0	0	1	0	1	1
Kentwood	15	3	18	7	11	3	21	39
Plainfield	12	2	14	8	11	1	20	34
Walker	14	0	14	5	7	0	12	26
Wyoming	0	1	1	0	28	17	45	46
	41	9	50	20	59	22	101	151
			<b>Total AID RECEIVED:</b>				<b>Total AID GIVEN:</b>	
			50				101	

\*No other fire department present



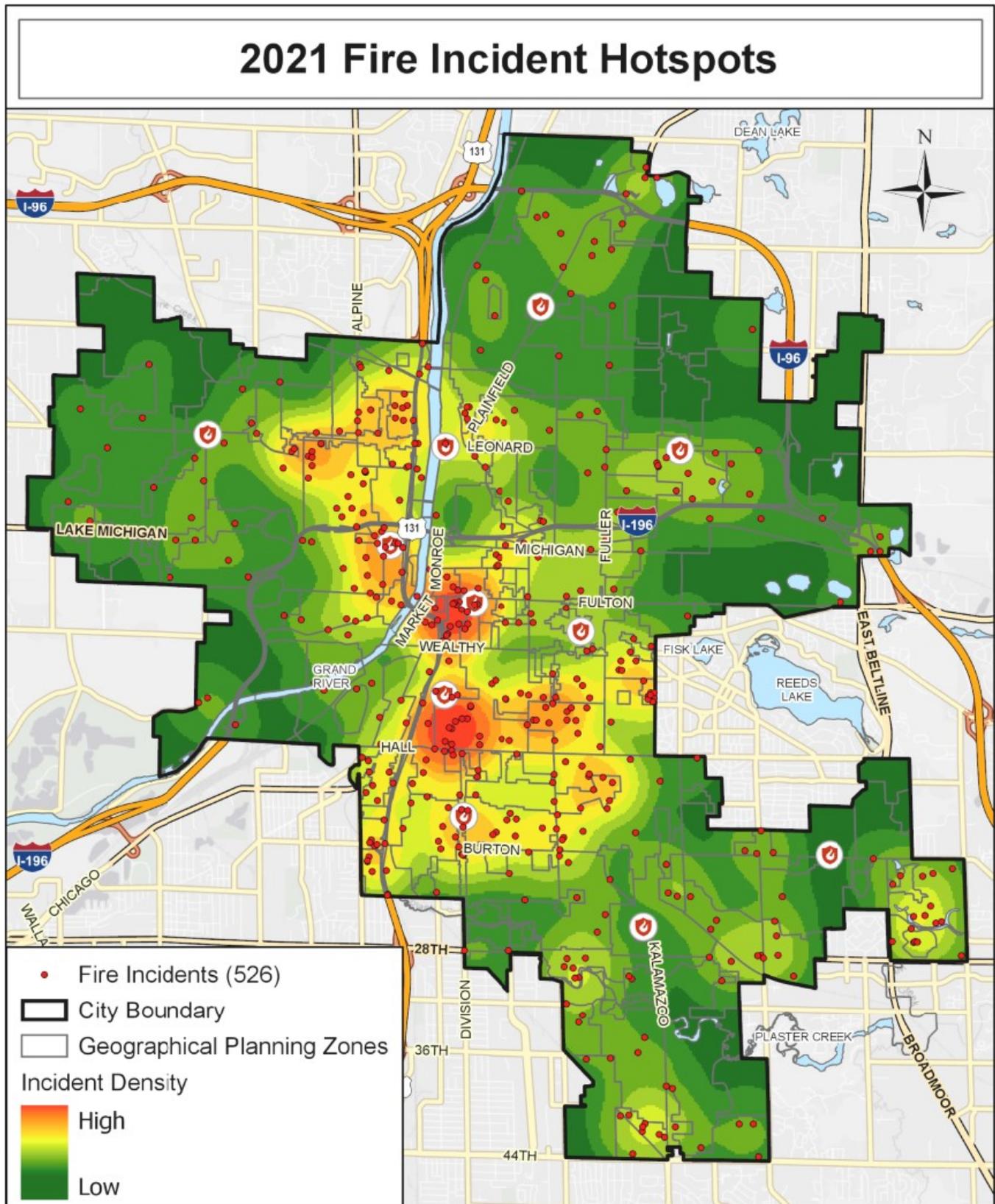
Total Incidents by Type	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fires	751	557	580	617	661	615	608	555	666	556
Overpressure/Rupture	36	36	45	43	51	191	202	158	113	138
EMS/ Rescue	13,749	13,085	13,510	14,792	14,687	15,345	14,509	15,465	15,539	16,483
Hazardous Conditions	647	1,035	990	898	1,166	1,155	1,006	1,574	1,006	1,064
Service Call	2,366	2,037	2,003	1,368	1,492	1,704	1,542	1,252	1,053	876
Good Intent	3,193	3,085	3,143	2,976	3,315	3,462	3,033	3,258	3,252	3,070
False Alarm/Calls	1,609	1,579	1,600	1,555	1,774	1,537	1,487	1,849	1,488	1,783
Severe Weather	2	3	9	4	14	10	6	11	2	5
Special Incident	19	5	5	3	6	1	2	2	1	11
<b>Total</b>	<b>22,372</b>	<b>21,422</b>	<b>21,885</b>	<b>22,256</b>	<b>23,166</b>	<b>24,020</b>	<b>22,395</b>	<b>24,124</b>	<b>23,120</b>	<b>23,986</b>

2021 saw a 16.52% decrease in the number of fire incidents, falling from 666 to 556. This marks a return to the overall downward trend of fire incidents. EMS calls rose significantly, clocking in at 16,483. With a 6.08% jump, this marks another record year for this incident type. Hazardous condition and service call incidents types were stable. While we did experience a few strong storm events, the call volume was much lower than 2019, when there were multiple winter weather impacts.

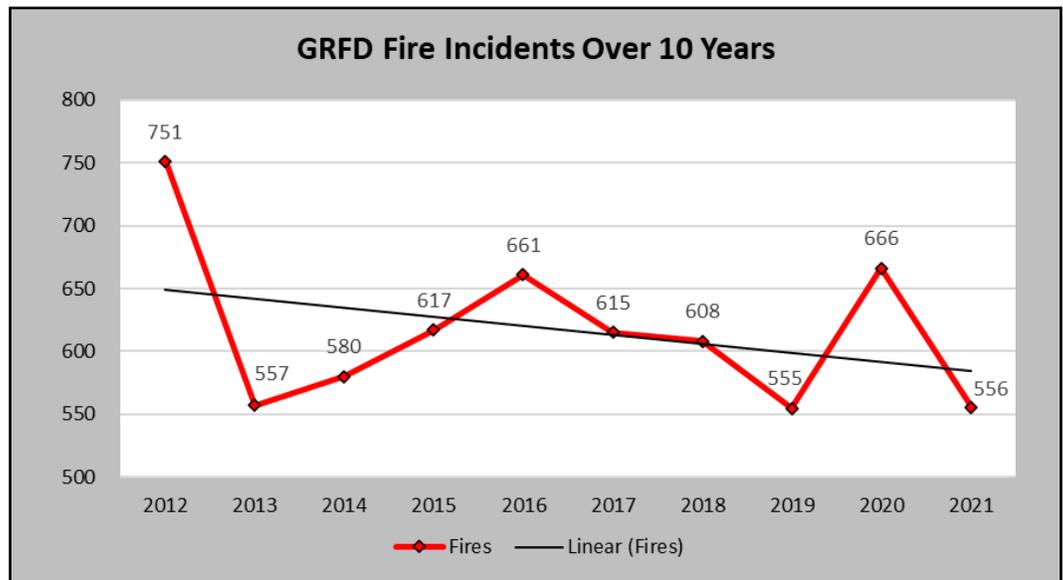
Total Incidents by Type	Numerical Change from 2020 to 2021	Percent Change from 2020 to 2021	Percentage of 2021 Incidents
Fires	-110	-16.52%	2.32%
Overpressure/Rupture	25	22.12%	0.58%
EMS/Rescue	944	6.08%	68.72%
Hazardous Conditions	58	5.77%	4.44%
Service Call	-177	-16.81%	3.65%
Good Intent	-182	-5.60%	12.80%
False Alarm/Calls	295	19.83%	7.43%
Severe Weather	3	150.00%	0.02%
Special Incident	10	1000.00%	0.05%
<b>Total</b>	<b>866</b>	<b>3.75%</b>	

# FIRE INCIDENTS

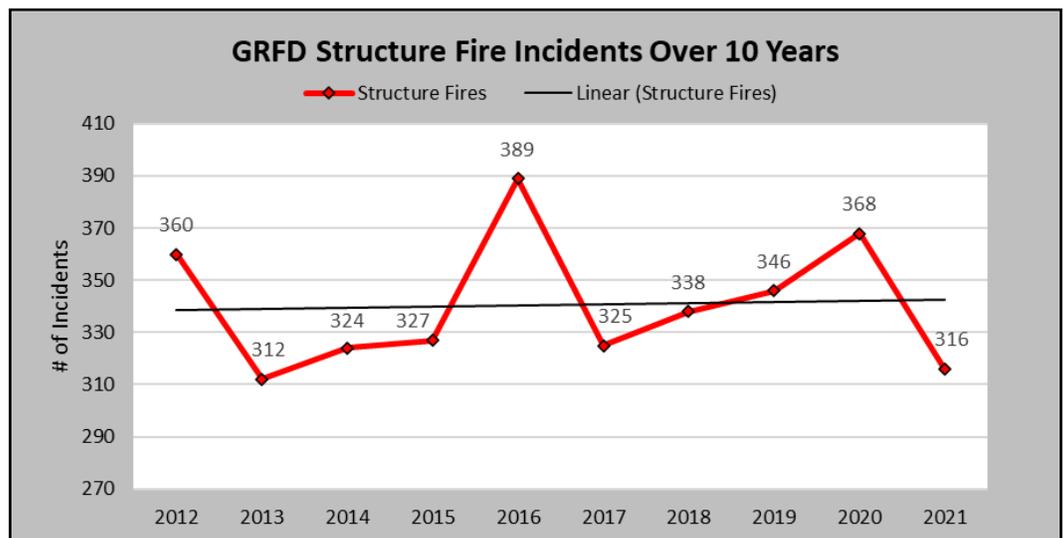
The map below shows the locations and relative density of fire incidents.



2021 saw a total fire incident call volume of 566, which was a significant decrease from 2020's total. This represents a 16.52% decrease from 2020. The ten year trend line for fire incidents continued to edge incrementally lower.



2021 also saw a decrease in structure fire volume, falling 52 (14.13%) from 368 to 316. The trendline for structure fires in the city is relatively flat when viewed over a ten year time span.

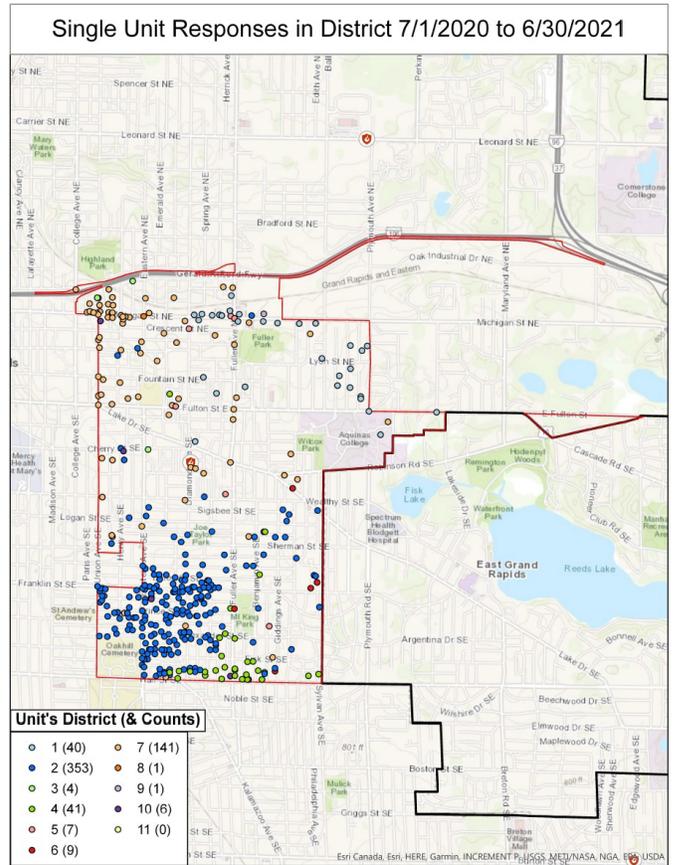
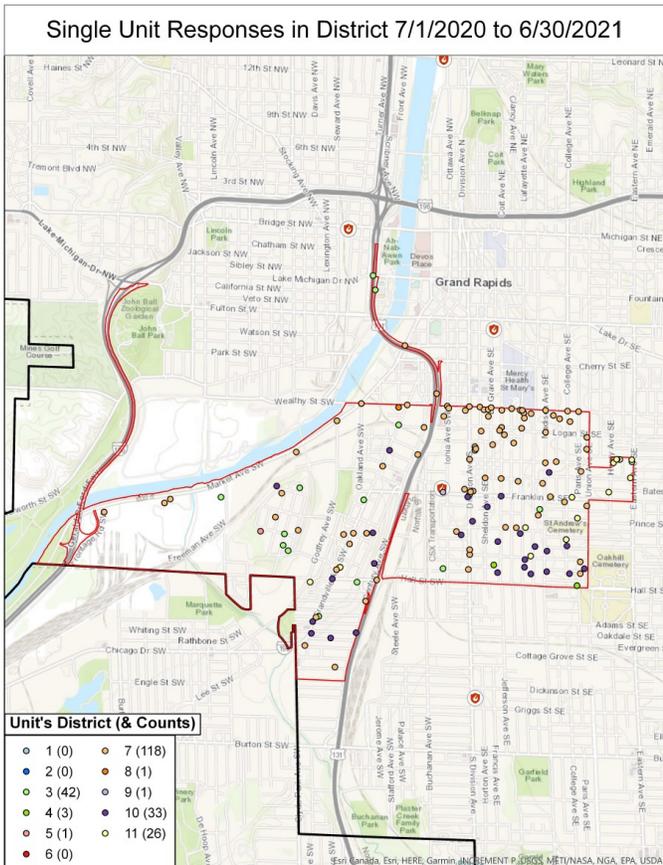
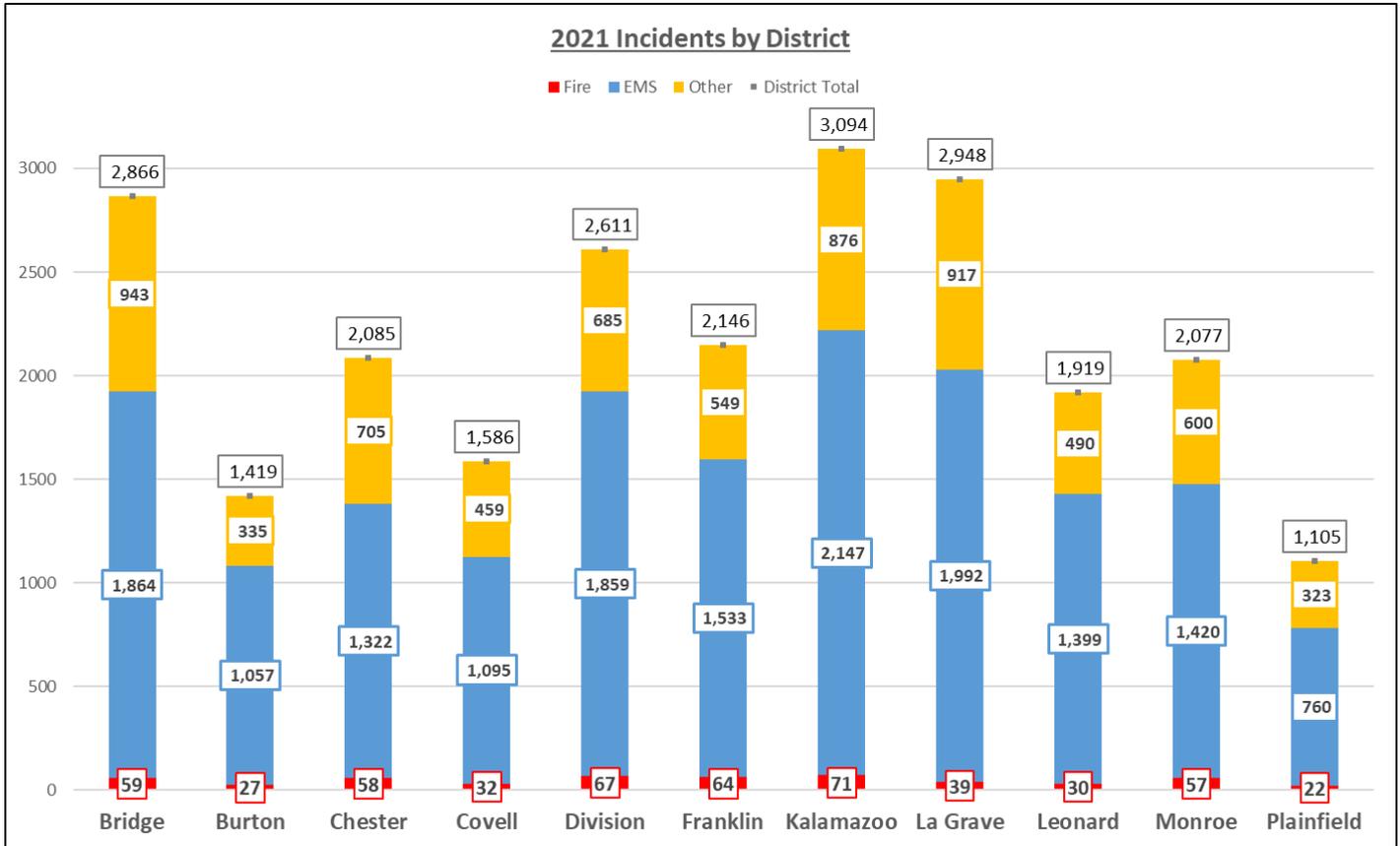


During 2021 there were structure fires on 203 days, representing a 55.62% chance of a structure fire occurring on any given day. Although the average number of structure fires was just under 1 per day, the city still experiences many days during the year with multiple fires. In 2020 this happened 81 times (22.19% of days). There were also 18 occurrences with simultaneous fires; these events require twice the typical amount of personnel, apparatus, and equipment to provide positive outcomes for our citizens and the community.

2021 Structure Fires		
# Per Day	Frequency	Total
1	122	122
2	59	118
3	15	45
4	5	20
5	1	5
6	1	6

2021 Simultaneous Structure Fires			
Description		Count	%
2	Structure Fires at Same Time	18	5.33%
3	Structure Fires at Same Time	0	0.00%
4	Structure Fires at Same Time	0	0.00%

# DISTRICT RESPONSES



Maps depicting the amount of times units from other districts responded into Chester and Franklin districts.

City Wide Simultaneous	
2012	56.04%
2013	51.81%
2014	56.18%
2015	55.29%
2016	60.04%
2017	59.60%
2018	63.15%
2019	61.05%
2020	57.88%
2021	61.98%

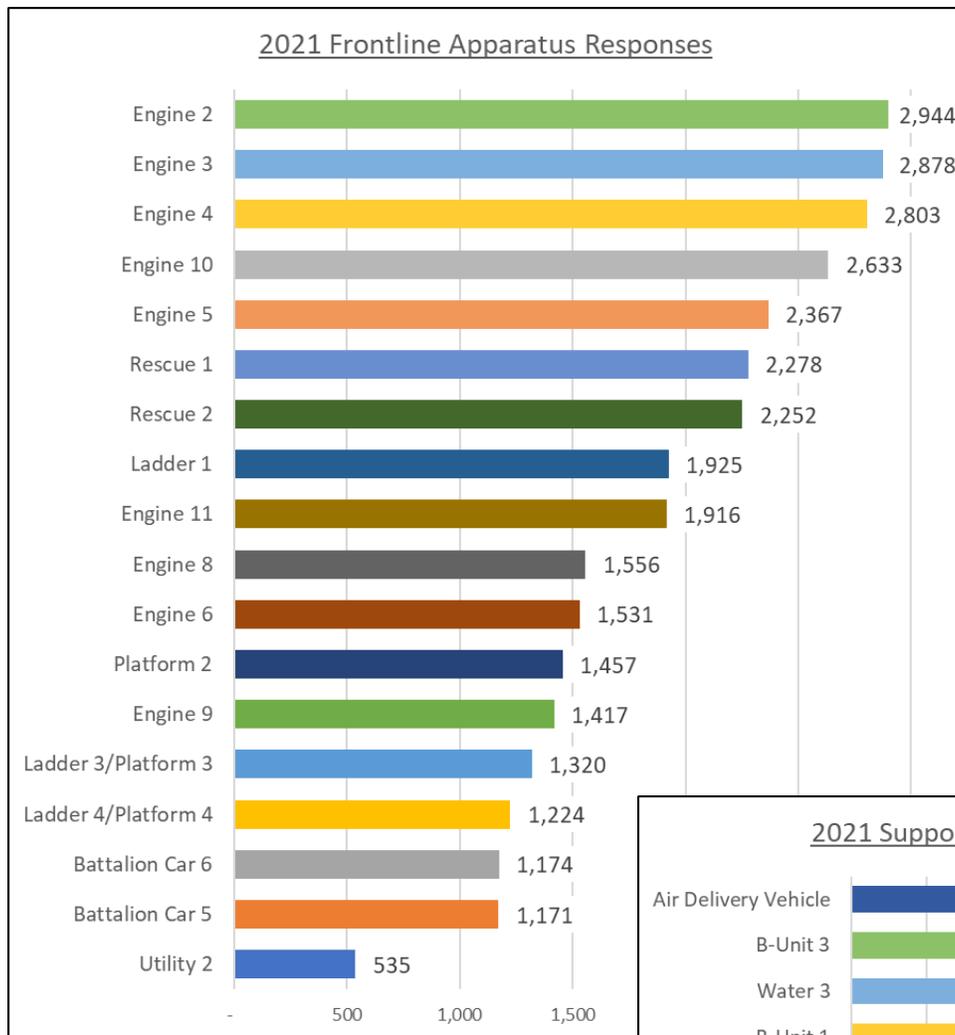
Simultaneous incidents serve as a decision point for both the distribution and concentration of resources. When multiple alarms occur in a single first due district, either a second unit in that district or resources from adjoining districts must be utilized for response. In addition to overall call volume, a major factor driving this metric is storm events, which were less frequent in 2020 and 2021 compared to 2019. 2021 saw the simultaneous call rate rise again to 61.98%. All districts except Division saw an increase in simultaneous calls. Kalamazoo district continues to lead the city in simultaneous call volume at 13.54%. Continued evaluation of this metric will aid in future station planning and resource deployment.

Simultaneous Call Percentage by Station District										
Station	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bridge	9.00%	9.07%	9.54%	10.19%	10.01%	11.49%	9.62%	10.62%	10.18%	10.96%
Burton	4.29%	4.85%	4.43%	6.07%	4.80%	5.50%	6.07%	6.90%	5.97%	7.32%
Chester	4.88%	7.69%	8.57%	7.05%	9.00%	11.59%	8.61%	11.80%	8.10%	8.59%
Covell	7.40%	6.52%	7.22%	7.28%	7.31%	9.39%	7.84%	13.15%	7.45%	8.07%
Division	6.72%	8.70%	6.71%	7.18%	9.53%	9.31%	8.00%	9.38%	9.91%	9.07%
Franklin	6.52%	5.03%	5.60%	7.30%	6.61%	7.05%	7.35%	7.85%	7.10%	10.16%
Kalamazoo	9.87%	11.31%	10.79%	11.56%	12.73%	13.70%	22.65%	13.07%	10.26%	13.54%
LaGrave	10.97%	9.72%	10.32%	7.45%	9.81%	10.49%	11.71%	11.22%	7.88%	9.09%
Leonard	5.64%	6.86%	8.70%	6.97%	9.23%	7.70%	7.57%	12.89%	8.79%	9.28%
Monroe	5.89%	6.90%	5.37%	8.59%	8.25%	6.75%	7.45%	11.69%	8.41%	9.15%
Plainfield	2.69%	3.62%	4.14%	6.68%	3.96%	5.27%	4.59%	10.40%	5.51%	6.33%

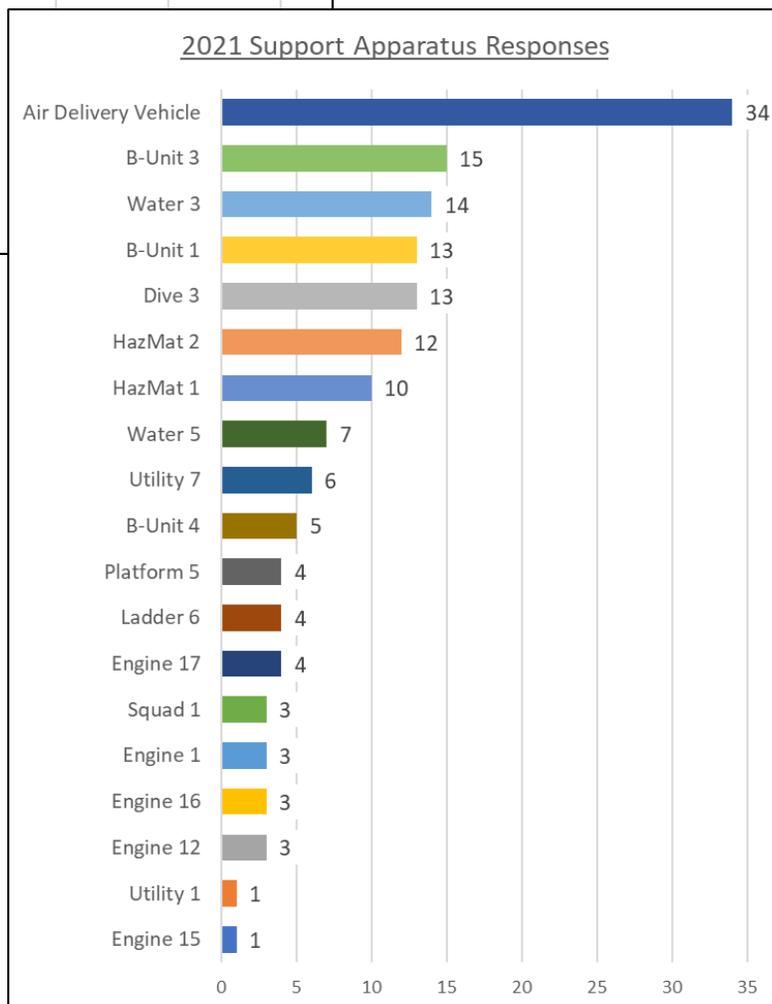
Reliability is the ability for a company to answer calls within their own district. This metric rose slightly to 83.67% in 2021. A large amount of analysis (see maps on the previous page) was done evaluating the Chester (E11) and Franklin (E2) districts to see how frequently E2 was running into E11’s district. Adjustments to the street speeds in those areas has helped to level the call volume and increased E11’s reliability from 65.89% to 69.47%. Reliability city wide has stabilized since the introduction of Automatic Resource Location in the dispatching process back in 2017. This system recommends the fastest responding apparatus regardless of the incident location.

Reliability										
Station	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bridge	85.06%	88.34%	92.62%	92.07%	89.88%	79.83%	78.04%	80.14%	81.57%	83.65%
Burton	90.43%	84.02%	87.16%	88.06%	86.87%	83.30%	84.24%	83.41%	84.45%	86.72%
Chester	88.71%	79.45%	83.39%	84.02%	81.17%	73.76%	72.64%	71.56%	65.89%	69.47%
Covell	86.09%	82.40%	85.82%	85.01%	85.19%	77.53%	78.43%	76.87%	79.81%	82.72%
Division	87.98%	82.55%	83.90%	83.27%	82.19%	78.91%	79.86%	76.04%	80.96%	81.53%
Franklin	90.84%	87.22%	95.78%	94.77%	93.07%	81.62%	87.25%	89.02%	88.82%	89.22%
Kalamazoo	94.83%	90.76%	95.43%	95.34%	94.13%	86.92%	87.90%	90.93%	91.72%	91.52%
LaGrave	92.79%	85.41%	83.50%	91.20%	94.13%	88.29%	85.30%	85.50%	89.10%	88.55%
Leonard	92.07%	84.49%	86.99%	86.47%	85.13%	76.36%	81.29%	78.69%	83.45%	80.50%
Monroe	88.60%	81.17%	85.80%	79.59%	77.77%	76.35%	74.56%	72.68%	76.42%	77.21%
Plainfield	92.11%	81.78%	90.09%	86.70%	85.38%	84.50%	82.81%	81.37%	85.16%	85.48%
CityWide	89.96%	84.33%	88.20%	88.55%	87.37%	81.29%	81.48%	81.00%	82.66%	83.67%

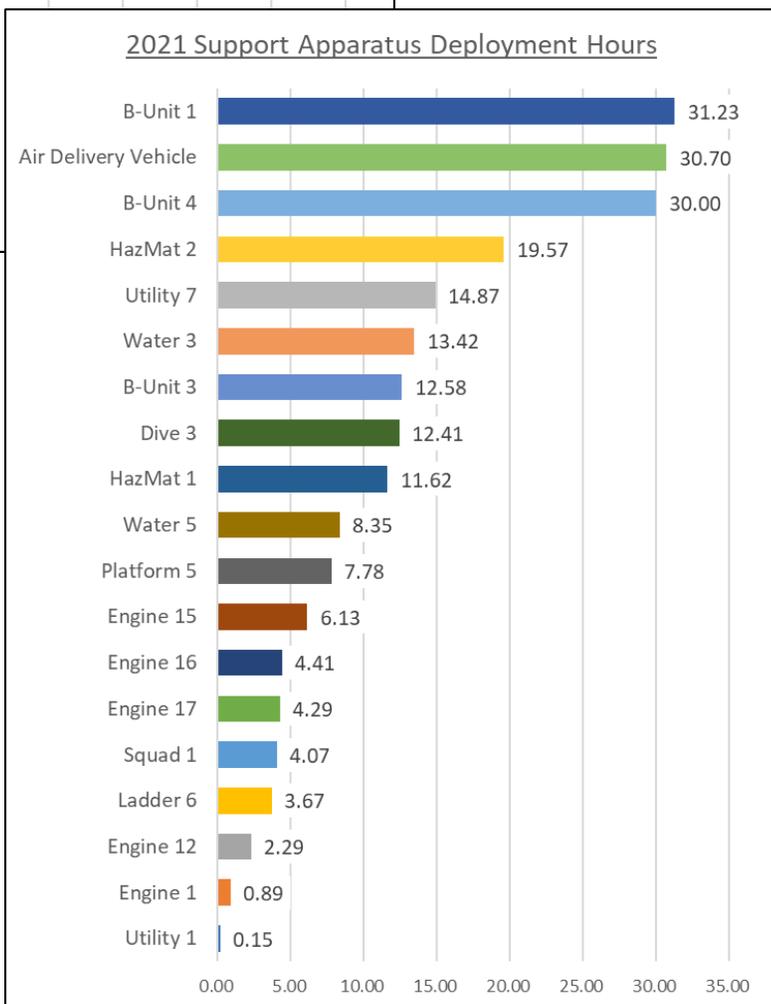
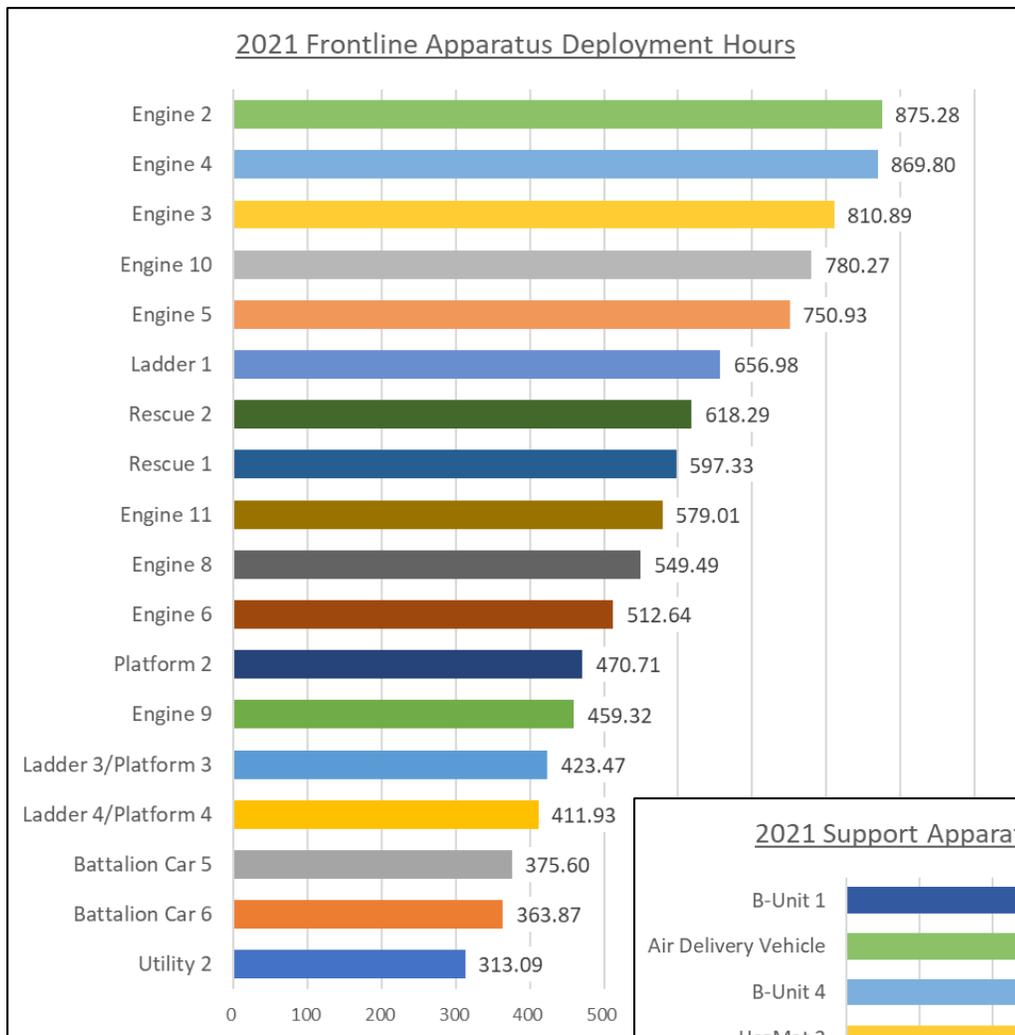
# APPARATUS RESPONSES



Engine 2 out of Franklin Station led the pack in 2021 with 2,944 responses. A lot of attention was given to factors driving this call volume. Because of the station’s location and the street speeds in the area, Engine 2 was selected for many incidents that happen outside of the station’s traditional boundaries. Responses into Chester, Division, and LaGrave districts are not uncommon. After working with the station Captains, adjustments were made to the street speeds in the area to level the call volume across the districts.



# APPARATUS DEPLOYED HOURS



Unit deployed time is closely correlated with unit responses. Engine 2 is again the leader, but Engine 4 has more deployed time than Engine 3. This can be attributed to the large size of Kalamazoo district and the preponderance of incidents at the edge of the district. These two factors mean Engine 4 is spending more time traveling to incidents than Engine 3, which is located in a more compact district. The same effect can be seen with Ladder 1 in comparison to Rescue 1 and Rescue 2.

# TEMPORAL ANALYSIS

Temporal Analysis - All Alarms								
Hour	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
00:00-00:59	127	91	85	120	99	104	121	747
01:00-01:59	113	89	72	78	100	99	133	684
02:00-02:59	121	67	59	76	75	87	117	602
03:00-03:59	80	62	64	62	73	72	82	495
04:00-04:59	61	63	72	55	71	62	62	446
05:00-05:59	75	64	59	62	58	54	68	440
06:00-06:59	80	101	95	93	87	81	77	614
07:00-07:59	90	105	97	99	115	102	108	716
08:00-08:59	118	140	144	140	122	131	135	930
09:00-09:59	130	179	158	159	135	141	125	1,027
10:00-10:59	127	169	180	170	191	186	135	1,158
11:00-11:59	157	195	178	166	179	193	171	1,239
12:00-12:59	171	202	191	201	173	204	187	1,329
13:00-13:59	173	210	192	190	197	222	184	1,368
14:00-14:59	151	193	183	186	223	215	211	1,362
15:00-15:59	166	228	175	206	184	196	188	1,343
16:00-16:59	180	212	192	191	193	203	211	1,382
17:00-17:59	188	218	195	192	214	203	196	1,406
18:00-18:59	188	179	198	163	183	196	193	1,300
19:00-19:59	164	172	166	166	172	171	183	1,194
20:00-20:59	159	169	165	159	155	165	193	1,165
21:00-21:59	141	151	143	166	148	194	180	1,123
22:00-22:59	147	146	162	151	132	141	169	1,048
23:00-23:59	116	99	149	121	101	144	138	868
Total	3,223	3,504	3,374	3,372	3,380	3,566	3,567	23,986

Temporal Analysis - EMS/ Rescues								
Hour	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
00:00-00:59	76	64	51	72	65	68	84	480
01:00-01:59	77	64	47	47	72	53	97	457
02:00-02:59	78	50	40	47	48	52	79	394
03:00-03:59	60	45	44	43	49	50	55	346
04:00-04:59	44	42	56	28	51	38	44	303
05:00-05:59	46	41	46	45	42	36	44	300
06:00-06:59	54	72	69	58	54	59	55	421
07:00-07:59	68	74	76	73	81	65	62	499
08:00-08:59	77	103	98	94	87	87	80	626
09:00-09:59	90	130	107	115	93	100	81	716
10:00-10:59	98	125	132	120	141	127	91	834
11:00-11:59	113	142	128	109	136	135	118	881
12:00-12:59	124	144	138	134	114	139	131	924
13:00-13:59	119	146	127	124	137	147	125	925
14:00-14:59	107	141	123	124	167	147	140	949
15:00-15:59	118	160	125	135	132	145	126	941
16:00-16:59	127	159	123	135	128	143	134	949
17:00-17:59	133	150	129	135	155	145	132	979
18:00-18:59	118	109	135	107	130	135	142	876
19:00-19:59	108	122	112	121	111	125	129	828
20:00-20:59	106	120	119	114	96	110	130	795
21:00-21:59	92	107	108	125	90	141	119	782
22:00-22:59	104	97	96	117	92	97	117	720
23:00-23:59	82	69	70	80	66	98	93	558
Total	2,219	2,476	2,299	2,302	2,337	2,442	2,408	16,483

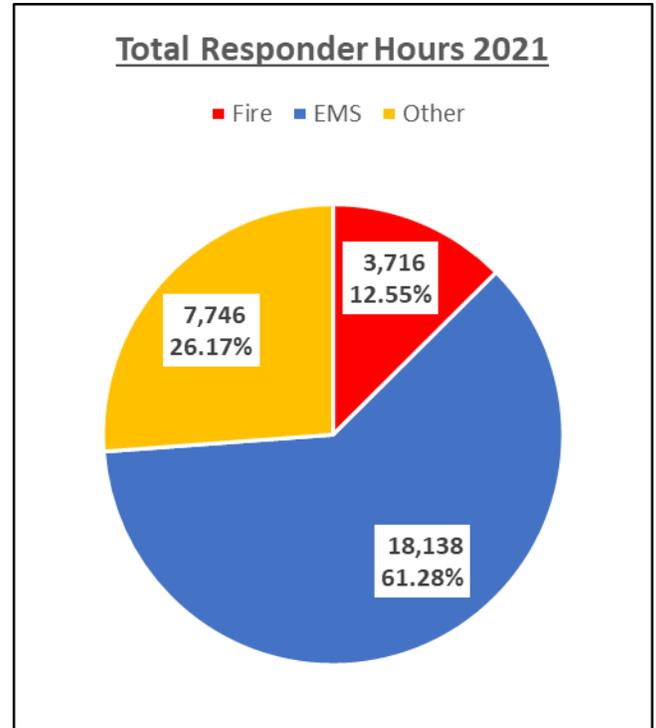
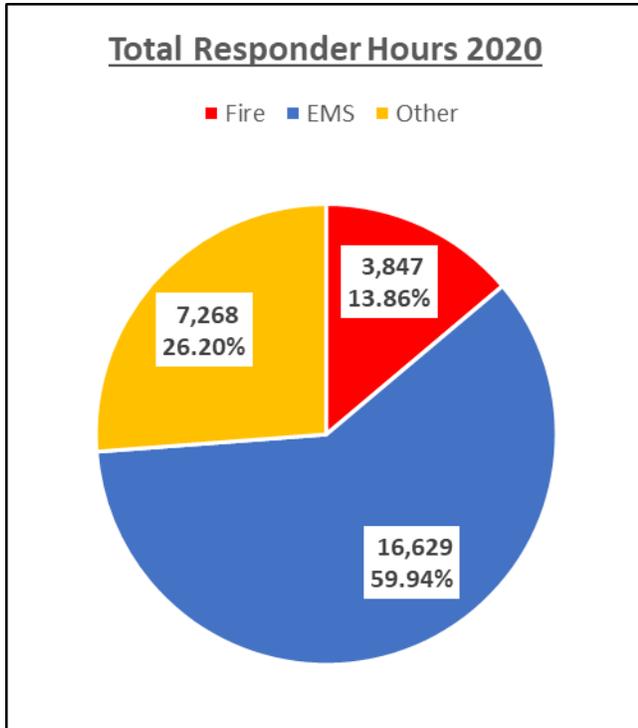
For 2021, the most active time period for the day of the week and hour of the day occurred on Tuesdays between 3pm and 4pm, with 228 calls for service. In 2020, the busiest day and hour were Wednesdays between 1pm and 2pm, with 240 calls.

EMS responses continue to be higher between 9 am and 10 pm, the time period most people are active and awake. This year’s busiest hours for EMS calls was on Thursday’s from 2pm to 3pm with a total of 167 incidents.

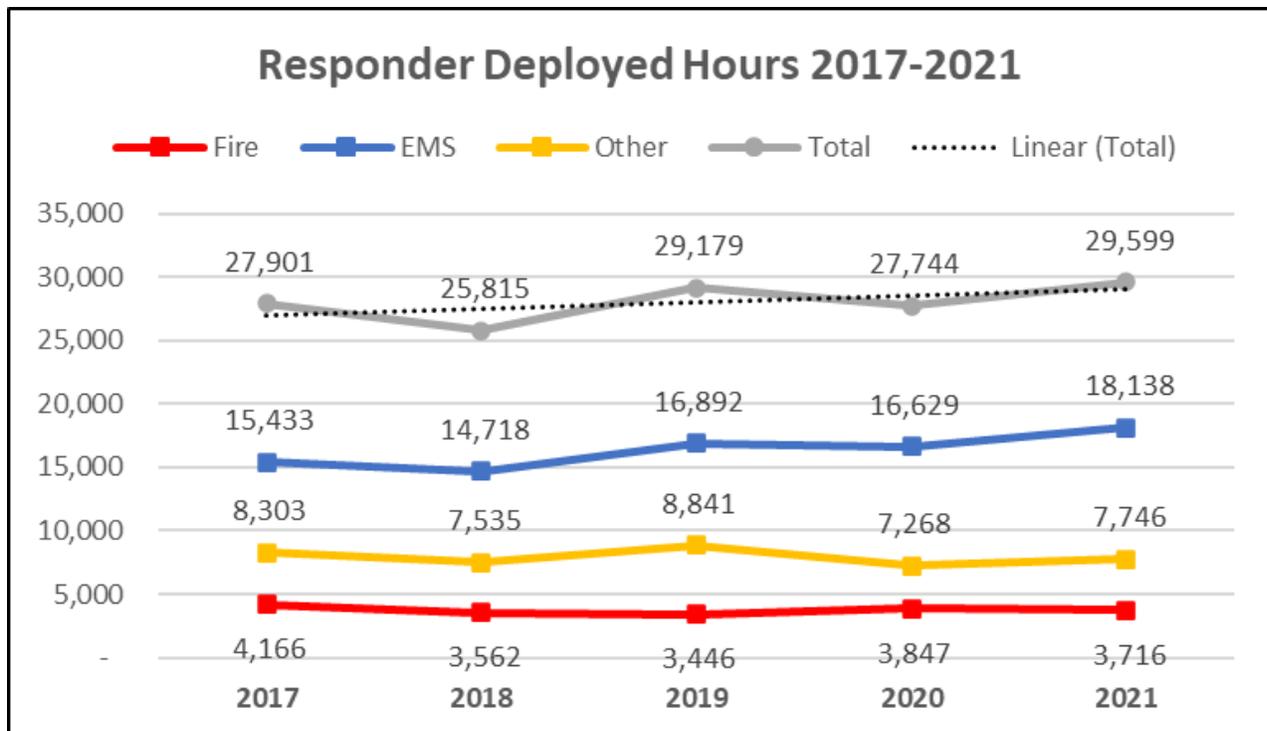
The most responses to fire incidents were seen around the noon hour and between 5pm and 7pm. This corresponds with the continued trend of cooking being the most common cause of fires in Grand Rapids.

Temporal Analysis - Fires								
Hour	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
00:00-00:59	4	5	1	1	1	3	2	17
01:00-01:59	0	2	3	4	3	2	0	14
02:00-02:59	2	1	4	1	3	3	2	16
03:00-03:59	2	0	1	2	1	1	1	8
04:00-04:59	0	1	1	2	2	0	0	6
05:00-05:59	2	2	2	0	2	0	0	8
06:00-06:59	2	3	3	1	3	2	1	15
07:00-07:59	1	1	5	0	1	4	3	15
08:00-08:59	2	2	2	3	0	2	1	12
09:00-09:59	6	0	2	3	3	5	3	22
10:00-10:59	1	4	0	0	1	3	3	12
11:00-11:59	3	4	6	7	5	3	3	31
12:00-12:59	10	5	3	4	4	4	5	35
13:00-13:59	3	8	10	7	6	11	5	50
14:00-14:59	8	2	6	2	3	5	6	32
15:00-15:59	4	6	6	3	4	3	3	29
16:00-16:59	10	3	8	1	6	5	3	36
17:00-17:59	7	6	8	3	5	3	7	39
18:00-18:59	7	4	6	4	2	1	4	28
19:00-19:59	7	6	5	1	2	5	6	32
20:00-20:59	4	3	2	2	5	4	4	24
21:00-21:59	4	3	4	4	4	3	7	29
22:00-22:59	4	4	4	3	1	1	3	20
23:00-23:59	6	2	3	5	1	2	7	26
Total	99	77	95	63	68	75	79	556

# RESPONDER HOURS



EMS incidents accounted for 68.72% of the emergency incidents in 2021, and accounted for 61.28% of the time personnel spent on scene, compared with 59.94% the previous year. Fire incidents generated only 2.32% of the total incident volume in 2021, but required 12.55% of our deployed time for safe and effective mitigation, contrasted with 13.86% in 2020. For comparison, 2020 had 110 more fire incidents than 2021. The trendline for EMS deployment time over the last five years shows a steady increase, matching the growth in EMS call volume during the same time period.



# DATA ANALYSIS METHODOLOGY

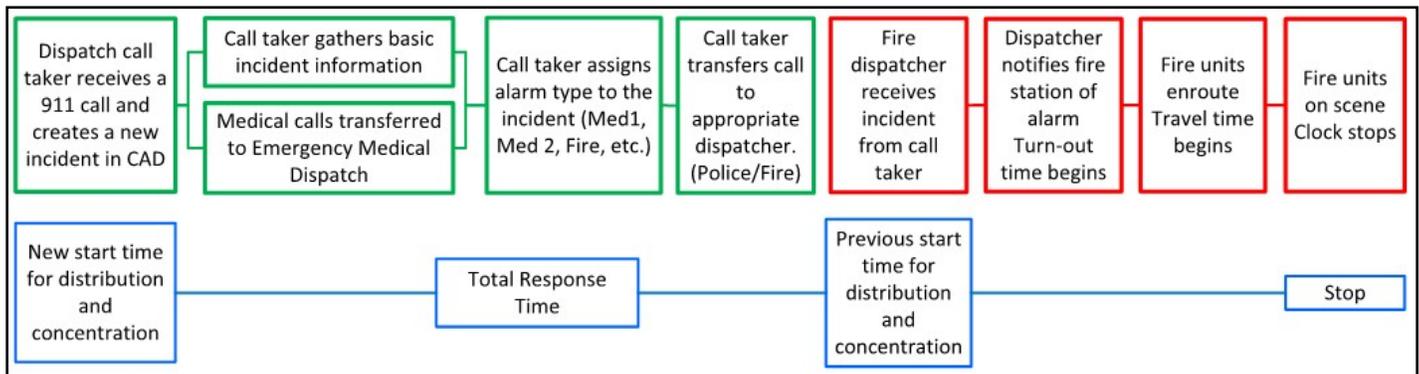
**Incidents must meet the following criteria to be included in the Baseline charts and Critical Performance Measures charts:**

- The incident location must be within city boundaries.
- The incident must be defined as an emergency response type.
- Units must respond and arrive in **Emergency** mode.

**Incidents that undergo data review:**

- Any duplicate Incident record.
- Any unit record missing a **Response Mode**.
- Any unit record with an **On Scene** time but no **Enroute Time**.
- Any incident record missing a CAD **Final Alarm Type**.
- Any incident record missing an **Incident Type**.
- Any incident record missing an **Aid Type**.
- Any unit record where the **Unit Canceled Time** and **Unit On Scene** time are both entered.
- Any incidents where Total Response Time is greater than 35 minutes.

In 2019, the methodology used to measure distribution and concentration compliance for the annual report was changed. In prior years, we were only able to measure time beginning when the fire dispatcher received the call. These times are now measured from the point when the call taker creates the incident in CAD. This allows us to capture all of the call processing time. This gives us a more realistic view of system-wide performance. These times now align with how the baseline performance charts are generated. Please see the flowchart below as a reference.



Aligning with the best practices in the fire service and the international accreditation process, the GRFD monitors the distribution, concentration (structure fires only represented to the right) and reliability of our apparatus in service at the individual unit, geographical planning zone, first due district, and citywide levels. The citywide numbers for 2021 show stability in all three areas. As noted above, the method used to measure distribution and concentration has changed. Distribution has dropped to 71.4% due to our ability to measure more of the total response time. Concentration, the ability to assemble an effective response force, fell to 91.7%. Reliability, the ability for a company to answer calls within their own district, rose slightly to 83.7%. Reliability has stabilized since the introduction of Automatic Resource Location in 2017.

# CRITICAL PERFORMANCE MEASURES

## DEFINITIONS

**Distribution:** The ability to get the first unit on scene within a benchmark time. Total response time is measured from when dispatch answers the call, until we report on scene.

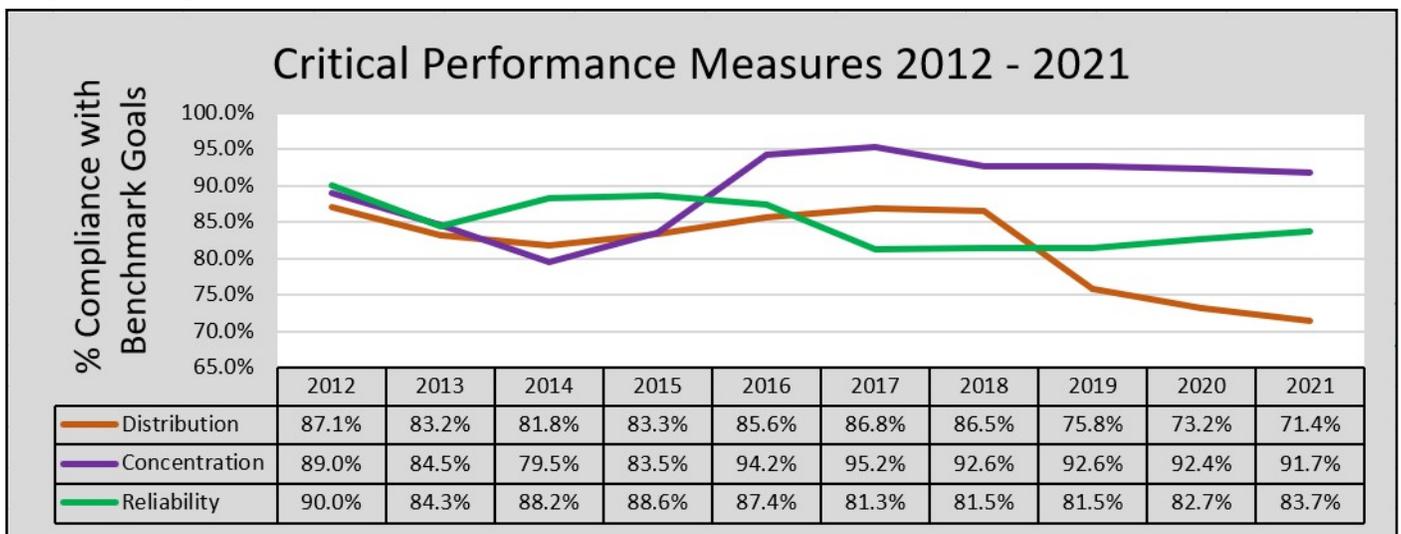
For instance, for any fire incident our distribution benchmark statement is: For all fire incidents (low, moderate, high and maximum risk), the 90th percentile of total response time for the arrival of the first due unit, staffed with a minimum of three firefighters, shall be 7 minutes. The first due unit shall be capable of establishing command, sizing up the incident, utilize appropriate tactics in accordance with departmental standard operating guidelines, develop an initial action plan, extend an appropriate hose line and begin initial fire attack or rescue.

**Concentration:** The ability to assemble an effective response force within a benchmark time. This basically means we are able to get all of our crews on scene within a specified time.

For instance, for a moderate risk (1-2 family residential) fire incident our concentration benchmark statement is: “For moderate risk fires, the 90th percentile of total response time for the arrival of the effective response force, consisting of 19 personnel, shall be 11 minutes. The effective response force shall have the capability to establish command, provide an uninterrupted water supply, advance an attack line and backup line for fire control, establish a rapid intervention crew, complete forcible entry and ventilation, conduct primary and secondary searches, control utilities and perform salvage and overhaul operations. These critical tasks shall be done in a safe manner in accordance with department standard operating guidelines.

**Effective Response Force:** the number of personnel required to perform the required critical tasking that aligns with both the needs of the incident and departmental policies/standard operating guidelines.

**Reliability:** The percentage of time a unit is able to answer calls in their own district. When reliability gets too low, the department needs to review the deployment model to determine if another unit is needed in that district. Our reliability performance fell between 2016 and 2017. The use of Automatic Resource Location has changed the way we look at this metric. Our goal is to show reliability for a unit if they were available, even when another unit responded to the call because CAD saw that unit as having a quicker response time.



# BENCHMARK PERFORMANCE STATEMENTS - FIRE

The **effective response force (ERF)** is the minimum amount of staffing and equipment that must reach a specific emergency zone, within a maximum prescribed total response time and is capable of initial mitigation. The ERF is the result of the critical task analysis conducted as part of the community risk assessment process. Actual baseline performance is noted in the tables.

For 90% of **all fire incidents** (low/moderate/high/maximum risk), the total response time for the **first due unit** (minimum of three firefighters) is **7 minutes**.

<b>(Low Risk) Fires - 90th Percentile</b>		2017-2021	2021	2020	2019	2018	2017
Benchmark	Description	Actual Performance					
Alarm Handling (1:30)	Incident Created to 1st Units Notified	0:02:18	0:02:28	0:02:06	0:02:11	0:02:06	0:02:28
	Incident Counts	1,814	347	398	342	356	371
Turnout (01:30)	Unit Notified to Unit Enroute	0:01:56	0:02:02	0:02:10	0:01:52	0:01:41	0:01:36
	Unit Counts	3,889	882	794	885	709	619
Travel (4:00)	1st Unit on Scene Distribution	0:05:17	0:05:12	0:05:14	0:05:28	0:05:10	0:05:13
	Incident Counts	1,651	323	349	308	332	339
	ERF Concentration	0:05:15	0:05:12	0:05:14	0:05:28	0:05:10	0:05:13
	Incident Counts	1,651	323	349	308	332	339
Total Response (07:00 and 7:00)	1st Unit on Scene Distribution	0:08:28	0:08:52	0:08:39	0:08:28	0:08:05	0:08:06
	Incident Counts	1,651	323	349	308	332	339
	ERF Concentration	0:08:28	0:08:51	0:08:39	0:08:28	0:08:04	0:08:06
	Incident Counts	1,651	323	349	308	332	339

For 90% of **moderate risk fires**, the total response time for the ERF of **19 personnel** shall be **11 minutes**.

<b>(Moderate Risk) Fires - 90th Percentile</b>		2017-2021	2021	2020	2019	2018	2017
Benchmark	Description	Actual Performance					
Alarm Handling (1:30)	Incident Created to 1st Units Notified	0:01:44	0:01:52	0:01:38	0:01:40	0:01:50	0:01:45
	Incident Counts	1,258	251	267	253	270	217
Turnout (01:30)	Unit Notified to Unit Enroute	0:01:58	0:02:11	0:02:03	0:01:57	0:01:47	0:01:46
	Unit Counts	8,604	1,869	1,893	1,760	1,717	1,365
Travel (3:45 and 8:00)	1st Unit on Scene Distribution	0:04:13	0:04:11	0:03:58	0:04:17	0:04:14	0:04:31
	Incident Counts	1,247	248	266	250	267	216
	ERF Concentration	0:08:57	0:07:55	0:07:48	0:08:52	0:09:50	0:09:35
	Incident Counts	530	118	113	99	122	78
Total Response (06:45 and 11:00)	1st Unit on Scene Distribution	0:06:52	0:06:58	0:06:30	0:06:55	0:06:52	0:06:40
	Incident Counts	1,247	248	266	250	267	216
	ERF Concentration	0:11:49	0:11:10	0:10:31	0:11:43	0:12:42	0:11:46
	Incident Counts	530	118	113	99	122	78

# BENCHMARK PERFORMANCE STATEMENTS - FIRE

For 90% of **high risk** fires, the total response time for the ERF of **25 personnel** shall be **13 minutes**.

<b>(High Risk) Fires - 90th Percentile</b>		2017-2021	2021	2020	2019	2018	2017
Benchmark	Description	Actual Performance					
Alarm Handling (1:30)	Incident Created to 1st Units Notified	0:01:55	0:01:56	0:01:51	0:01:40	0:02:34	0:01:56
	Incident Counts	193	24	25	17	20	107
Turnout (01:30)	Unit Notified to Unit Enroute	0:02:03	0:02:23	0:02:18	0:02:13	0:02:00	0:01:48
	Unit Counts	1,589	244	238	149	158	800
Travel (4:00 and 10:00)	1st Unit on Scene Distribution	0:04:17	0:04:09	0:03:21	0:04:47	0:04:22	0:04:33
	Incident Counts	191	24	25	17	20	105
	ERF Concentration	0:08:52	0:08:01	0:07:43	0:06:49	0:09:04	0:08:41
	Incident Counts	71	17	13	6	8	27
Total Response (07:00 and 13:00)	1st Unit on Scene Distribution	0:07:14	0:06:20	0:06:11	0:07:01	0:07:15	0:07:42
	Incident Counts	191	24	25	17	20	105
	ERF Concentration	0:12:05	0:11:18	0:11:06	0:08:52	0:12:06	0:12:41
	Incident Counts	71	17	13	6	8	27

*\*Note that for 2018 and 2019 the methodology for classifying incidents was modified, resulting in more high risk fire incidents.*

For 90% of **maximum risk** fires, the total response time for the ERF of **34 personnel** shall be **15 minutes**.

<b>(Maximum Risk) Fires - 90th Percentile</b>		2017-2021	2021	2020	2019	2018	2017
Benchmark	Description	Actual Performance					
Alarm Handling (1:30)	Incident Created to 1st Units Notified	0:01:43	0:01:25	0:02:43	0:01:26	0:01:40	0:01:38
	Incident Counts	25	5	8	3	2	7
Turnout (01:30)	Unit Notified to Unit Enroute	0:02:05	0:02:08	0:02:09	0:01:42	0:01:44	0:01:56
	Unit Counts	252	59	83	28	10	72
Travel (4:00 and 12:00)	1st Unit on Scene Distribution	0:04:03	0:03:52	0:04:05	0:02:40	0:03:52	0:03:29
	Incident Counts	24	5	8	3	1	7
	ERF Concentration	0:09:44	0:09:54	0:09:21	N/A	N/A	0:03:33
	Incident Counts	4	1	1	0	0	2
Total Response (07:00 and 15:00)	1st Unit on Scene Distribution	0:06:53	0:06:23	0:08:36	0:05:30	0:06:38	0:05:40
	Incident Counts	24	5	8	3	1	7
	ERF Concentration	0:28:14	0:11:45	0:31:41	N/A	N/A	0:19:58
	Incident Counts	4	1	1	0	0	2

*\*Note that in 2018 and 2019 there were not enough maximum risk fire incidents to perform a 90th percentile baseline*

# BENCHMARK PERFORMANCE STATEMENTS - (EMS)

## Emergency Medical Services (EMS)

For 90% of all emergency medical services incidents (low, moderate, high and special risk), the total response time for the arrival of the first due unit, staffed with a minimum of three personnel is 7 minutes and 30 seconds.

(Low Risk) EMS - 90th Percentile		2017-2021	2021	2020	2019	2018	2017
Benchmark	Description	Actual Performance					
Alarm Handling (2:00)	Incident Created to 1st Units Notified	0:03:23	0:03:37	0:03:31	0:03:20	0:03:14	0:03:08
	Incident Counts	87,390	17,931	17,353	17,278	16,786	18,042
Turnout (01:30)	Unit Notified to Unit Enroute	0:01:47	0:02:00	0:01:56	0:01:44	0:01:34	0:01:31
	Unit Counts	85,154	17,713	17,119	16,887	16,091	17,344
Travel (4:00)	1st Unit on Scene Distribution	0:05:03	0:05:06	0:05:04	0:05:06	0:05:02	0:04:57
	Incident Counts	78,882	16,338	15,746	15,615	15,067	16,116
	ERF Concentration	0:05:03	0:05:06	0:05:04	0:05:06	0:05:02	0:04:57
	Incident Counts	78,865	16,337	15,746	15,609	15,062	16,111
Total Response (07:30 and 7:30)	1st Unit on Scene Distribution	0:08:48	0:09:12	0:09:03	0:08:45	0:08:30	0:08:21
	Incident Counts	78,882	16,338	15,746	15,615	15,067	16,116
	ERF Concentration	0:08:48	0:09:12	0:09:03	0:08:45	0:08:30	0:08:21
	Incident Counts	78,865	16,337	15,746	15,609	15,062	16,111

For 90% of moderate risk EMS incidents, the total response time for the effective response force (ERF) of six personnel, shall be 9 minutes and 30 seconds.

(Moderate Risk) EMS - 90th Percentile		2017-2021	2021	2020	2019	2018	2017
Benchmark	Description	Actual Performance					
Alarm Handling (2:00)	Incident Created to 1st Units Notified	0:03:02	0:03:08	0:03:04	0:03:13	0:02:52	0:02:49
	Incident Counts	4311	886	809	1001	828	787
Turnout (01:30)	Unit Notified to Unit Enroute	0:02:04	0:02:21	0:02:18	0:01:56	0:01:44	0:01:42
	Unit Counts	8976	2182	1956	1880	1515	1442
Travel (4:00 and 6:00)	1st Unit on Scene Distribution	0:06:18	0:06:12	0:06:04	0:06:32	0:06:08	0:06:27
	Incident Counts	3907	836	770	913	731	657
	ERF Concentration	0:08:18	0:08:11	0:08:01	0:08:33	0:08:09	0:08:36
	Incident Counts	2797	601	571	585	566	474
Total Response (07:30 and 9:30)	1st Unit on Scene Distribution	0:09:50	0:09:58	0:09:43	0:10:07	0:09:35	0:09:41
	Incident Counts	3907	836	770	913	731	657
	ERF Concentration	0:11:43	0:11:34	0:11:41	0:12:12	0:11:31	0:11:34
	Incident Counts	2797	601	571	585	566	474

# BENCHMARK PERFORMANCE STATEMENTS - (EMS)

For 90% of **high risk EMS incidents**, the total response time for the ERF of **11 personnel**, shall be **11 minutes and 30 seconds**.

<b>(High Risk) EMS - 90th Percentile</b>		<b>2017-2021</b>	<b>2021</b>	<b>2020</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>
<b>Benchmark</b>	<b>Description</b>	<b>Actual Performance</b>					
<b>Alarm Handling (2:00)</b>	Incident Created to 1st Units Notified	0:03:02	0:03:06	0:02:22	0:03:16	0:03:04	0:02:43
	Incident Counts	121	19	24	30	17	31
<b>Turnout (01:30)</b>	Unit Notified to Unit Enroute	0:02:04	0:02:01	0:02:29	0:03:28	0:01:43	0:01:47
	Unit Counts	344	64	78	74	42	86
<b>Travel (4:00 and 8:00)</b>	1st Unit on Scene <b>Distribution</b>	0:07:01	0:09:52	0:06:19	0:06:54	0:05:42	0:06:17
	Incident Counts	105	17	22	28	15	23
	ERF <b>Concentration</b>	0:09:38	0:06:09	N/A	0:09:46	0:03:22	0:08:26
	Incident Counts	9	2	0	1	1	5
<b>Total Response (07:30 and 11:30)</b>	1st Unit on Scene <b>Distribution</b>	0:10:47	0:14:15	0:09:58	0:09:30	0:11:39	0:10:11
	Incident Counts	105	17	22	28	15	23
	ERF <b>Concentration</b>	0:26:11	0:12:30	N/A	0:26:31	0:26:07	0:13:14
	Incident Counts	9	2	0	1	1	5

For 90% of **maximum risk EMS incidents**, the total response time for the arrival of the ERF of **19 personnel**, shall be **11 minutes and 30 seconds**.

<b>(Maximum Risk) EMS - 90th Percentile</b>		<b>2017-2021</b>	<b>2021</b>	<b>2020</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>
<b>Benchmark</b>	<b>Description</b>	<b>Actual Performance</b>					
<b>Alarm Handling (2:00)</b>	Incident Created to 1st Units Notified	0:06:48	N/A	N/A	0:02:15	N/A	0:07:53
	Incident Counts	3	0	0	2	0	1
<b>Turnout (01:30)</b>	Unit Notified to Unit Enroute	0:02:18	N/A	N/A	0:02:39	N/A	0:01:22
	Unit Counts	12	0	0	7	0	5
<b>Travel (4:00 and 8:00)</b>	1st Unit on Scene <b>Distribution</b>	0:04:19	N/A	N/A	0:04:30	N/A	0:01:43
	Incident Counts	3	0	0	2	0	1
	ERF <b>Concentration</b>	N/A	N/A	N/A	N/A	N/A	N/A
	Incident Counts	0	0	0	0	0	0
<b>Total Response (07:30 and 11:30)</b>	1st Unit on Scene <b>Distribution</b>	0:10:14	N/A	N/A	0:07:47	N/A	0:10:48
	Incident Counts	3	0	0	2	0	1
	ERF <b>Concentration</b>	N/A	N/A	N/A	N/A	N/A	N/A
	Incident Counts	0	0	0	0	0	0

*\*Note that for high and maximum risk EMS call types there are not enough incidents to perform a statistically relevant 90th percentile baseline analysis at the total response time level.*

# BENCHMARK PERFORMANCE STATEMENTS - HAZMAT

## Hazardous Materials (HazMat)

For 90% of **all** HazMat incidents (low, moderate, high and maximum risk), the total response time (TRT) for the arrival of the first due unit, staffed with a minimum of three firefighters, is 7 minutes.

For 90% of **moderate risk** HazMat incidents, the GRFD will respond with an effective response force (ERF) of **7 personnel** (including a minimum of 1 HazMat technician) within **9 minutes total response time**.

For 90% of **high risk** HazMat incidents, the GRFD will respond with an ERF of **13 personnel** (including a minimum of 5 HazMat technicians and 1 HazMat specialist) within **11 minutes total response time**.

For 90% of **maximum risk** HazMat incidents, the GRFD will respond with an ERF of **3 personnel** (comprised of 2 HazMat technicians and one battalion chief) within **11 minutes total response time**.

<b>(Low Risk) HazMat - 90th Percentile</b>		<b>2017-2021</b>	<b>2021</b>	<b>2020</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>
<b>Benchmark</b>	<b>Description</b>	<b>Actual Performance</b>					
<b>Alarm Handling (1:30)</b>	Incident Created to 1st Units Notified	0:03:48	0:04:22	0:03:42	0:03:55	0:03:19	0:02:40
	Incident Counts	89	23	28	30	2	6
<b>Turnout (01:30)</b>	Unit Notified to Unit Enroute	0:02:31	0:02:14	0:02:21	0:02:17	0:00:43	0:02:43
	Unit Counts	78	11	26	19	1	21
<b>Travel (4:00)</b>	1st Unit on Scene <b>Distribution</b>	0:05:17	0:04:24	0:05:31	0:04:43	0:04:32	0:05:39
	Incident Counts	43	8	14	15	1	5
	ERF <b>Concentration</b>	0:05:17	0:04:24	0:05:31	0:04:43	0:04:32	0:05:39
	Incident Counts	43	8	14	15	1	5
<b>Total Response (07:00 and 7:00)</b>	1st Unit on Scene <b>Distribution</b>	0:09:24	0:10:02	0:09:39	0:08:44	0:08:45	0:07:15
	Incident Counts	43	8	14	15	1	5
	ERF <b>Concentration</b>	0:09:24	0:10:02	0:09:39	0:08:44	0:08:45	0:07:15
	Incident Counts	43	8	14	15	1	5

*\*NOTE: In 2021 there were not enough moderate, high or maximum risk HazMat incidents to perform a 90th percentile baseline analysis.*

# BENCHMARK PERFORMANCE STATEMENTS - TECH

## Technical Rescue

For 90% of **all** technical rescue incidents, the total response time (TRT) for the arrival of the first due unit, staffed with a minimum of three firefighters, is 7 minutes.

For 90% of **trench rescue incidents**, we will respond with an effective response force (ERF) of **13 personnel** (minimum of 8 operations level responders) within **11 minutes** TRT.

For 90% of **collapse rescue incidents**, we will respond with an ERF of **16 personnel** (minimum of 8 technician level responders) within **11 minutes** TRT.

For 90% of **confined space rescue incidents**, we will respond with an ERF of **13 personnel** (minimum of 8 operations level responders) within **11 minutes** TRT.

For 90% of **vehicle extrication incidents**, we will respond with an ERF of **11 personnel** within **11 minutes** TRT.

Vehicle Extrication - 90th Percentile		2017-2021	2021	2020	2019	2018	2017
Benchmark	Description	Actual Performance					
Alarm Handling (1:30)	Incident Created to 1st Units Notified	0:01:45	0:01:34	0:01:31	0:01:30	0:01:43	0:01:54
	Incident Counts	233	50	60	39	43	41
Turnout (01:30)	Unit Notified to Unit Enroute	0:02:03	0:02:14	0:02:18	0:02:01	0:01:46	0:01:38
	Unit Counts	1270	295	342	200	218	215
Travel (4:00 and 9:00)	1st Unit on Scene <b>Distribution</b>	0:04:58	0:04:55	0:05:05	0:04:51	0:04:52	0:04:51
	Incident Counts	229	48	60	39	43	39
	ERF <b>Concentration</b>	0:09:01	0:08:12	0:10:38	0:07:54	0:09:09	0:08:35
	Incident Counts	117	25	32	18	25	17
Total Response (07:00 and 12:00)	1st Unit on Scene <b>Distribution</b>	0:07:53	0:07:42	0:07:28	0:08:15	0:08:03	0:07:48
	Incident Counts	229	48	60	39	43	39
	ERF <b>Concentration</b>	0:17:12	0:15:54	0:19:25	0:16:20	0:13:51	0:15:32
	Incident Counts	117	25	32	18	25	17

For 90% of **machine extrication incidents**, we will respond with an ERD of **13 personnel** within 11 minutes TRT.

For 90% of **elevator incidents**, we will respond with an ERF of **7 personnel** within **11 minutes** TRT.

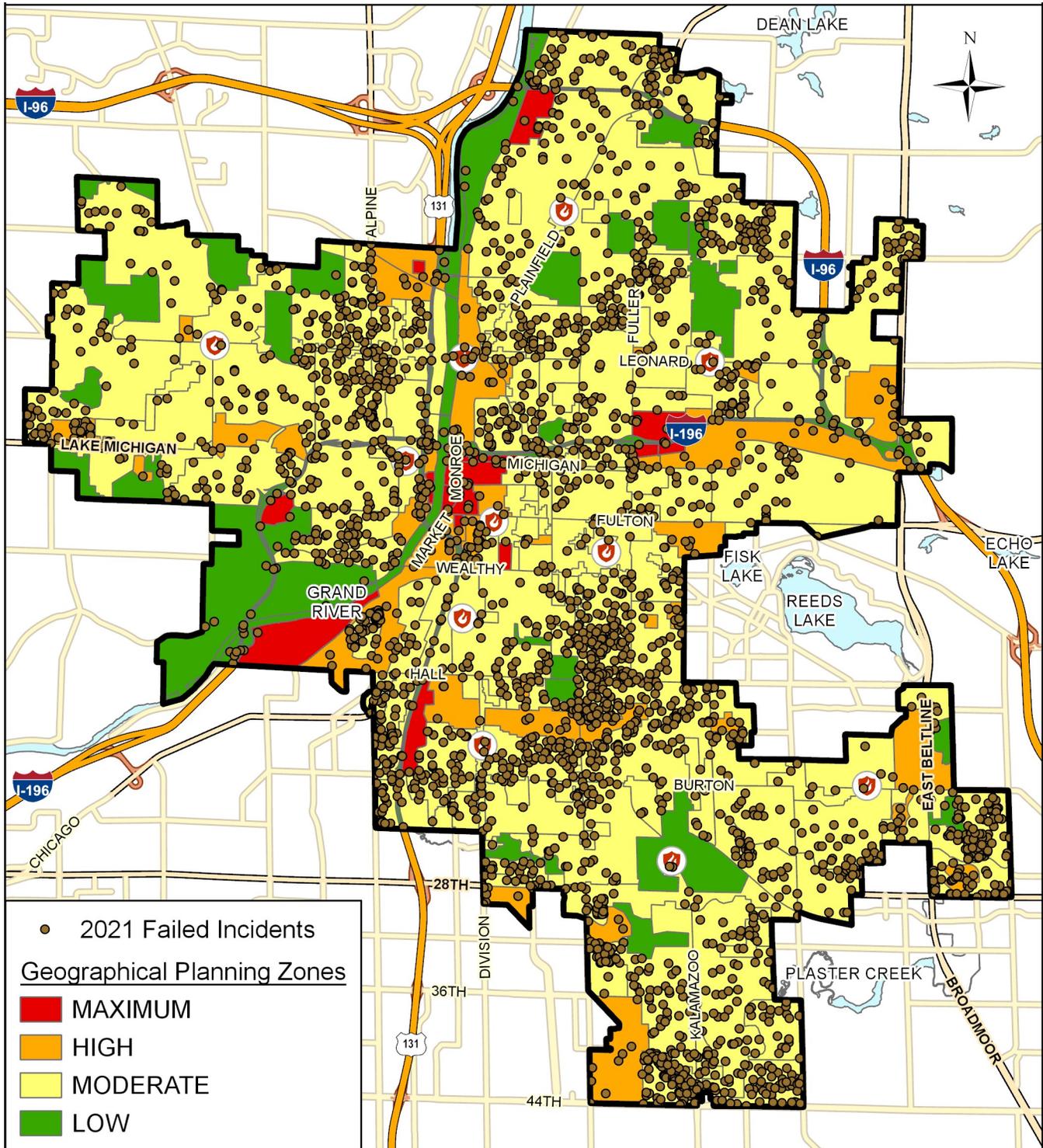
For 90% of **river rescue incidents**, we will respond with an ERF of **17 personnel** within **11 minutes** TRT.

For 90% of **lake/ice rescue incidents**, we will respond with an ERF of **13 personnel** within **11 minutes** TRT.

*\*Note: In 2021 there were not enough trench rescue, collapse rescue, confined space, machine extrication, elevator, river rescue or lake/ice rescue incidents to perform a 90th percentile baseline analysis.*

# DISTRIBUTION/TRAVEL TIME

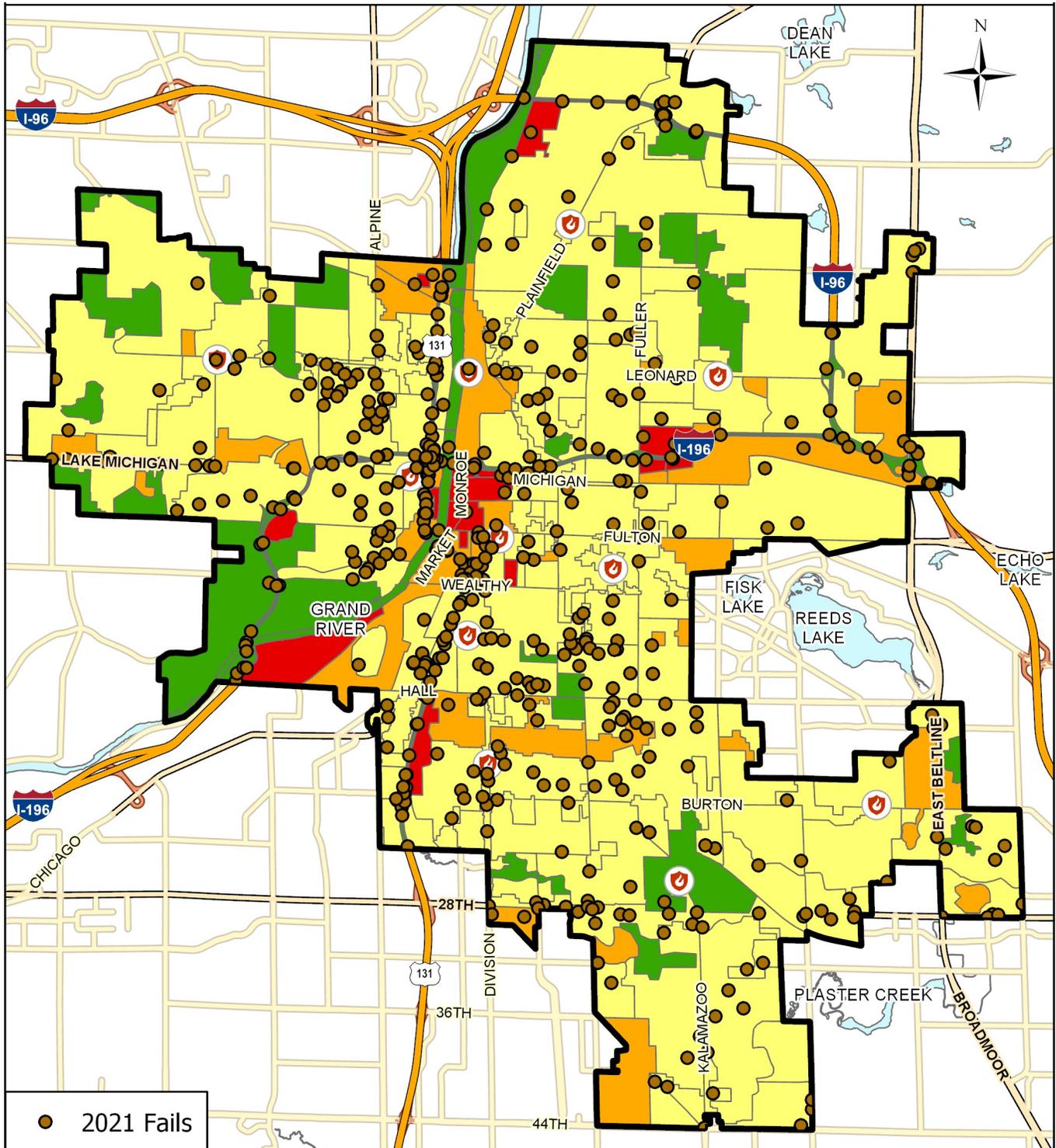
Distribution is the ability to get our first unit on scene within a set time. **Travel time** for apparatus is the biggest factor for meeting this benchmark. This map displays the locations of incidents where our four minute travel time benchmark goals were not achieved. This map and table contain data for all alarm types.



	Bridge	Burton	Chester	Covell	Division	Franklin	Kalamazoo	La Grave	Leonard	Monroe	Plainfield	Citywide
<b>Pass</b>	1869	641	1082	704	1701	1541	1301	2239	902	1300	524	<b>13804</b>
<b>Fail</b>	307	546	427	499	409	217	1156	112	600	330	303	<b>4906</b>
<b>Compliance</b>	85.89%	54.00%	71.70%	58.52%	80.62%	87.66%	52.95%	95.24%	60.05%	79.75%	63.36%	<b>73.78%</b>

# CONCENTRATION/EFFECTIVE RESPONSE FORCE

Concentration is the ability to assemble an **effective response force** within a set time. This map displays locations of multi-company alarms where the benchmark response times for concentration were not met. This map and table contain data for all multi-company alarm types, including medical alarms.



	Bridge	Burton	Chester	Covell	Division	Franklin	Kalamazoo	La Grave	Leonard	Monroe	Plainfield	Citywide
<b>Pass</b>	106	18	38	32	70	67	99	70	30	53	21	<b>604</b>
<b>Fail</b>	21	10	8	18	18	13	14	13	36	12	22	<b>185</b>
<b>Compliance</b>	83.46%	64.29%	82.61%	64.00%	79.55%	83.75%	87.61%	84.34%	45.45%	81.54%	48.84%	<b>76.55%</b>

# PERFORMANCE GAP ANALYSIS

This page evaluates performance gaps for the total response area, such as inadequacies, inconsistencies, and negative trends. In addition, this data compares the current operational capabilities and capacity of the department to the identified risk level within the community. Once the gaps have been identified, a continuous improvement plan will be developed and tracked throughout the following year to address these existing gaps and variations.

## Distribution - Goal of 90% compliance.

- Page 49 - **Citywide Distribution** decreased to **71.4%**. This gap continues to be driven by large single company districts on the edge of the city, combined with an increasing population/risk. Station notification issues also impacted this metric in 2021.
- Page 56 - **Burton Distribution** travel time fell to **54.00%**, due to increased call volume at district boundaries.
- Page 56 - **Kalamazoo Distribution** travel time fell to **52.95%**, also due to a large amount of calls at the southern and northern extremes of the district.

## Concentration (Effective Response Force) — Goal of 90% compliance (measures all call types).

Concentration compliance maps measure concentration for all call types. These are all outlying districts where it is more difficult to assemble effective response forces. All four of these districts saw similar compliance rates in 2020.

- Page 57 - Leonard ERF is at 45.45%.
- Page 57 - Covell ERF is at 64.00%.
- Page 57 - Plainfield ERF is at 48.84%.
- Page 57 - Burton ERF is at 64.29%.

## Reliability - Goal of 90% compliance.

- Page 43 - **Monroe Reliability** is at **77.21%**. A slight improvement for 2021. Monroe's reliability is impacted by their responses as a second due engine on the north half of the city without a second unit in the station. Monroe also covers for Covell, Plainfield, and Leonard districts when they experience simultaneous alarms.
- Page 43 - **Chester Reliability** at **69.47%**. This metric rose in 2021, and can be attributed to changes on the CAD street speed layer, which decreased the likelihood of other apparatus responding into Chester's district.

## Simultaneous - Monitored for overall call volume in response districts.

Most districts saw increases in simultaneous responses compared to 2020.

- Page 43 - Kalamazoo district continues to be the highest district for simultaneous calls, with a 13.54% rate for 2021. Kalamazoo has been in the top two for simultaneous calls since 2012.
- Page 43 - **Bridge and Franklin** are the next highest at **10.96%** and **10.16%** respectively.
- Page 43 - **Leonard and Monroe** are the highest single company districts at **9.29%** and **9.15%** respectively.

## Benchmark Performance Statements

- Page 50 - **Low risk fire response** is over target by **1 minute and 52 seconds**.
- Page 52 - **Low risk EMS** is over target by **1 minute and 42 seconds**.
- Page 52 - **Moderate risk EMS** is over target by **2 minutes and 4 seconds**.
- Page 5 4- **Low risk HazMat** is over target by **3 minutes and 2 seconds**.
- Page 55 - **Vehicle Extrication** is over target by **3 minutes and 54 seconds**.

**All other technical rescue response types had insufficient data sets to perform fractile analysis.**

# CURRENT AND FUTURE DEPLOYMENT ANALYSIS

This page evaluates current and future deployment demands for the organization. Risk categorization, service impact considerations and deployment practices are analyzed for efficiency and effectiveness measurements that consider overall response, consistency, reliability, resiliency and outcomes. The agency demonstrates that its current deployment strategy adequately addresses risk in the community, while adapting to or improving upon the effectiveness, efficiency and safety of its operations. Program gaps are discussed. Teams representing all areas of the department met during September and October to perform this analysis.

## Fire

- Population growth along the boundaries of the city is causing more concentration fails in those areas.
- Solar panel installations are inconsistent. Manufacturing issues can present added risks.
- Homeless encampments are adding new fire risks with improper heating equipment.
- Police communications are now encrypted, which limits interoperability on scene.
- The lack of a dedicated safety officer was also noted, but is being addressed by the assignment of a second Battalion chief for working fires. Off duty personnel are also being utilized.

## EMS

- COVID-19 forced major changes for responses to EMS incidents. This is causing long term stress for crews.
- Decreases in ALS staffing impacted GRFD operations, leading to increased on-scene times.
- Crews will begin assessing blood sugar with glucometers.
- There is increasing violence across the city. All apparatus are now equipped with ballistic helmets and vests.

## Technical Rescue

- GRFD is preparing to go operational with the dive rescue program. Need awareness training for non-technicians.
- Water rescue ERF's were updated to provide better staffing for different sections of the river.
- Vehicle extrication—Lithium ion battery fires are difficult to extinguish.
- Elevator rescues—up to date contact information for building owners is needed for dispatch.

## Hazardous Materials

- Carbon Dioxide systems in restaurants are presenting new hazards. Need to provide education to dispatchers on the difference between carbon monoxide and carbon dioxide alarm types.
- Working with MABAS to structure team as a FEMA type 1 hazmat resource.
- Operations level training for HazMat needs to be delivered more frequently (annual basis).

## Community Risk Reduction (Prevention)

- Use and storage of butane for marijuana processing
- Amazon vehicle storage location is a high risk facility due to facility design.
- Propane use in social zones is hard to regulate. Need to provide better education to business owners.

## Domestic Preparedness/EOC

- Development of Continuity of Operations Plans for all city departments
- Provide training for virtual EOC incident management tool
- Provide continuing education for personnel assigned to EOC positions.
- The emergency management program requires more staffing to meet all objectives.



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**For further information on this Annual Report  
contact the Grand Rapids Fire Department  
Planning Division at 616.456.3900**



## Grand Rapids Fire Department

38 LaGrave Ave SE  
Grand Rapids, MI 49503



## MISSION

The Grand Rapids Fire Department values people by saving lives, protecting property and responding to the needs of our community.

## VISION

Providing world class fire services for our community by employing a diverse workforce which respects, values and develops our members.

## VALUES

Honesty • Integrity • Loyalty • Teamwork • Excellence



